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ORIGINAL ARTICLES.

THE DIFFERENTIAL DIAGNOSIS OF PERIPHERIC AND CENTRAL DISEASES OF THE EAR.¹

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I BELIEVE that it is not generally understood among neurologists that otologists are possessors of, and are in the constant use of pretty reliable methods for making a differential diagnosis of peripheric and central diseases of the ear. By *peripheric* affection of the ear, one external to the labyrinth is meant. A central affection may be situated either in the labyrinth itself, in the trunk of the nerve, or the brain. In the large majority of cases it has become practicable to decide whether a given lesion is situated chiefly in the tympanum, or in the labyrinth, or trunk of the nerve. The power to determine whether the seat of the affection be in the nerve trunk, its expansion in the cochlea or at its origin, is very often, as yet, quite beyond us. Still we are able sometimes to discriminate between a pure affection of the semicircular canals and of the percipient apparatus. The methods for such a differential diagnosis ought by this time to be the common property of all scientific members of the profession. To contribute to this end is the object of this paper.

What I have to say is chiefly founded upon clinical observations made by my associate, Dr. J. B. Emerson, and myself at the Manhattan Eye and Ear Hospital, and also upon studies in private practice.

It has been supposed for many years, if not ever since the study of diseases of the ear had any scientific history, that a diagnosis had been made when a plug of black wax was found in the auditory canal of a person with impaired hearing. But we have learned that inspissated cerumen is usually only a symptom of an incipient or advanced lesion of a more serious nature. He who removes the wax and congratulates his patient on the usually much improved condition of his hearing, without a thorough investigation of the lesion which has induced this abnormal condition of hardening and collection of the wax, has omitted an inquiry that may be very important to his patient.

Yet it is true that there is quite a large class of

cases of aural disease where an adequate diagnosis is readily made of a peripheric disease. Such are cases of acute catarrh and acute suppurations of the tympanum.

There is, however, a large class in which it is impossible without a painstaking examination, with a careful weighing of the subjective and objective symptoms to determine whether the causative lesion is in the peripheric or central parts of the organ of hearing. These cases are not attended by suppuration. A large proportion of them present no marked symptoms, except loss of hearing and *tinnitus aurium*. A closer examination will, of course, find many more evidences of disease of the ear than these, but they may suffice for a crude classification.

In a given case of aural disease, in which we wish to differentiate between disease of the outer or inner parts of the ear, it is wise to begin by an examination of the effect of noise upon the hearing power, and upon the sensory part of the ear. It is now definitely settled that there is a class of patients who hear better in a noise than in a quiet place, and that they themselves, not only hear better than they do under what are properly considered favorable conditions for hearing, but that they hear better than do those whose ears are in a normal condition. It is thus shown that this improved condition does not depend upon the fact that people speak louder in a noise, but that the noise makes a change in the working of the apparatus by which hearing is accomplished.

Observations, repeated over and over again for a number of years, have convinced me that this symptom of hearing better in a noise, belongs only to the peripheric affections, and never to those of the nerve. It cannot be readily observed unless both ears are affected, although it may even then be detected in very intelligent patients. I recall two such. They have found out that with one ear they hear exceedingly well in a noise, and with the other badly. They utilize this knowledge in travelling in the railway cars.

The determination of the existence of this symptom is then a very good guide in the diagnosis of aural disease. How has the fact been ascertained that it is found only in affections of the auditory canal, tympanum, Eustachian tube—in short, in lesions situated peripherically to the perceptive apparatus? I answer, by a long series of observations upon cases which are similar in all other respects to affections of the outer or middle ear. In one instance, I was for a

¹ Read before the Section in Neurology, New York Academy of Medicine, April 13, 1888.

long time—that is, for two or more years—very much puzzled by the persistent declaration of an intelligent patient that he always heard better in the railway cars, although I felt sure, from the history, and from the other symptoms, that he was suffering from a central affection.

This patient is a man of fifty-nine years of age, who has been, but who is not now a practitioner of medicine. He suffers intolerably from the unpleasant effect which noise has upon his ears and head. To mitigate this, he had caused to be made, plugs of vulcanite very ingeniously and neatly constructed, which he wears constantly in the street and other noisy places. One day when, upon one of his visits occurring at long intervals, he was reiterating to me the fact that he heard better in the cars than where it was quiet, I asked him if he wore the obturators in the cars. He answered affirmatively, and he also stated that his hearing became worse the instant he took them out.

I learned on examination, to anticipate what I shall have to say of the use of the tuning fork, that with the obturators in his auditory canals, bone conduction was better, while when the ears were free from these, aerial conduction was better.

The explanation of the apparent exception to what I had supposed to be a rule was evident at once. I found that unlike persons with disease of the middle ear alone, he did not hear with ease, or better than those whose ears are sound in the noisy cars, but that he heard better than he could in quiet places, and also that the obturators made his hearing worse when he was trying to listen to one person in a quiet room. The plugs added a peripheral lesion to the central one. They diminished the intensity of the sound of the tuning fork by aerial conduction, just as as a plug of wax will in the ear of a boiler-maker who suffers from disease of the acoustic nerve as a result of his occupation, or as in the same class of cases a catarrh of the tympanum will mask the central lesion.

As I have shown in a paper upon "The Effects of Noise upon Diseased and Healthy Ears,"¹ boiler-makers' deafness depends upon a central affection, one of the labyrinth or acoustic nerve. Like people who have no such disease, they may have a peripheral affection of the ear added to this. They will then present what may, perhaps, be called a mixed case, and often the symptoms of the disease of the canal (wax) or of the tympanum (acute catarrh) will predominate, as far as the tuning-fork is concerned, until the peripheral disease disappears. My patient had artificially packed his auditory canal. Hence the relatively better hearing in a noise and the diminished intensity and duration of the aerial conduction.

It not unfrequently happens that the peripheral

disease advances to be also one of the vestibule and labyrinth, or it may simultaneously affect both parts, as in suppurative inflammation of the tympanum in scarlet fever. We may have, and often do have, at the same time intense congestion or even suppuration of the labyrinth also. In chronic non-suppurative affections of the middle ear the labyrinth may also become diseased. It is only in well-demarcated cases, or those in which the symptoms of peripheral or central disease, as the case may be, predominate excessively over the others that this symptom of hearing better or worse in a noise can be readily made out. Although I am no friend to the system of the too rigorous bounding of the situation of a disease, such, for example, as the classification of an affection of the iris as entirely distinct from one of the ciliary muscle and choroid, I believe that we are very often able to demarcate a disease of the tympanum from one of the labyrinth. The parts are anatomically quite distinct.

It is not always easy to decide definitely that a given patient does, or does not, hear better in a noise. It is astonishing that even moderately intelligent persons, who hear very badly in the ordinary semi-quiet of their homes when engaged in conversation, and who hear better than their neighbors with good ears in the elevated railway, or surface, or steam cars, or in the din of a machine shop, will sometimes persistently declare that they hear worse in a noise. Their preconception of what they believe to be the case, causes them to ignore the facts, when they often might have much more comfort of their lives if they appreciated that they always hear better under certain conditions. "None so deaf as those who won't hear," is particularly applicable to these cases. I wish to deduce from this fact of the common failure of correct observation, that patients should be subjected to a careful cross-examination before their statement that they hear worse in a noise, is accepted.

I think we may set it down as a fact that persons with impaired hearing, who actually hear worse in a noise than in a quiet place, are suffering from some central disease of the ear. But we may easily accumulate the evidence on this point. We are by no means confined to this one symptom in making a differential diagnosis in aural disease. It should be added, while upon this subject, that noise not only decreases the hearing capacity in those affected with central disease of the ear, as it does in those with good ears, but it is unusually distressing and disturbing to them. Those who are affected with purely tympanic disease experience none of this distress or discomfort. If there be any apparent exceptions to this latter statement, a little close examination will show that they are only apparent.

In many cases of acute catarrh of the tympanum, noise is distressing, but other symptoms soon indi-

¹ Archives of Otology, vol. xii. p. 103.

cate that we have to do with a case of *panotitis*, or of simultaneous affection of the labyrinth and tympanum. A well-defined chronic or acute inflammation of the tympanum will show no discomfort in noise, but will be very favorably affected by it, while it is a part of the necessary treatment of an inflamed acoustic nerve to exclude the sound from it by plugging the auditory canal, and other devices.

I should have observed before, that many people who speak very feelingly of the variability in their hearing power, are really mistaken when they suppose that their hearing varies under the same conditions. It is the variability of these conditions, and chiefly as to noise and quietude, and not of their hearing power, especially in chronic cases, that is really the explanation of the variable capacity to hear.

The disproportion between the capacity for hearing the watch or acoumeter and conversation, which usually exists in central diseases of the ear, may sometimes add another link to the chain of evidence. In these cases the human voice is heard in a quiet place relatively much better than the watch. In peripheric disease there is no such disproportion. Persons with disease of the tympanum hear all sounds badly in a quiet place.

Important as is the consideration of the effect of noise upon the ear in differential diagnosis, it must yield the place in significance to the evidence given by the tuning-fork.

The literature of otology from the time of E. H. Weber, 1858, to our own is rich in suggestions as to the use of the tuning-fork in the diagnosis of aural disease. But it is not, in my opinion, until Rinne's experiments were modified and amplified by American observers, that we had what I think we now possess, a simple means, in the vast majority of cases, of making a differential diagnosis as to peripheric and central aural diseases.

It does not fall within the scope of this paper to recount the steps that have been taken to bring us where we are now, nor will it be supposed that I am entirely ignorant of them because I simply allude to them. I am anxious simply to show neurologists and practitioners in general that we have finally acquired a simple and tolerably exact system of diagnosis in these important cases.

If the tuning-fork known as C¹ or C² be listened to by a person under fifty years of age, with normal hearing power, it will be found that it is always heard louder through the air, when placed in vibration and held in front of the *meatus auditorius externus*, than when its handle is placed firmly on the mastoid process. It will also be heard for a longer time. According to Emerson's experiments,¹ C¹ and C² are heard about twice as long (thirty-eight

seconds) through the air as through bone; hence, as Rinne's famous experiment shows, if the person upon whom the observation is made indicates the instant that he ceases to hear the fork through the bones and it is held in front of the meatus, it will still be heard the number of seconds necessary to the proportion. If now we use the tuning-fork on the assumption that these observations of Emerson's have shown the truth as to ears with normal hearing, we have a most reliable test by an observation of the departure from a normal standard in a given case.

It has been observed, although Emerson's paper, written in 1882, makes no mention of this, that after middle life bone conduction is much reduced. This is due, I think, to senile changes, and I have named the condition *presbykousis*. This must be taken into account in all investigations, but it may be allowed for, and will not interfere with the diagnosis. If an auditory canal of a normal hearer be artificially plugged in any secure manner, or by disease, the bone conduction becomes at once intensified and it is longer. Observations upon many thousands have shown this.

This is equally true, with a few exceptions, when pus is seen to block the tympanum. In these exceptional cases the tuning-fork is heard better through the air than through bone. But when the pus is removed and the tympanum somewhat, although perhaps not entirely freed from inflammatory products, the bone conduction will again predominate. In these cases pressure has been placed upon the vestibule and cochlea, and a case of tympanic disease converted into one of the labyrinth also.

I have already alluded to the change of a case of acoustic neuritis, such as occurs in boiler-makers, by a plug of wax or tympanitic catarrh, to one of peripheric disease.¹ In this case the tuning-fork will be temporarily heard better through the bone. From these two series of facts, it is not far to the deduction that we are dealing with a disease of the peripheric part of the organ of hearing, where the bone conduction is louder and of longer duration, and that we have a central trouble when the reverse is true, and the tuning-fork is heard better and longer through the air. Taken in connection with the effects of noise upon the ears, we have a tolerably accurate means of diagnosis.

Why it is, that the sound of the tuning-fork is intensified when conducted through bone in disease of the middle ear and auditory canal may perhaps be easily explained. But why in disease of the central apparatus is the tuning-fork heard best through the air? I suppose it is simply because in any failure of the perceptive apparatus, the sound is best heard through the most favorable channel for the conduction of sound. Just as the pupil is the best

¹ Archives of Otology, vol. xii. p. 63.

¹ Transactions American Otological Society, 1886.

gateway for the entrance of light to the retina, so is the auditory canal the best entrance for sound to the membrana tympani. On the other hand, when the peripheral parts of the ear are converted by plugs of wax, or by collections of mucus or pus, or by thickening of the ligaments of the ossicula, or of the mucous membrane of the tympanum into solid conductors and resonators, sound passing through them is intensified. To such a degree may this go on, that, as we have seen, a person suffering from disease of the acoustic nerve may, by plugging his ears like his companion, who has only chronic inflammation of the tympanum, increase his hearing in a noisy place.

In 1874¹ I made some investigations upon the effects of quinine upon the ears, and I came to the conclusion that the impairment of hearing caused by the drug was due to its effect upon the cochlea. I was not then fully aware of the value of the tuning-fork in the differential diagnosis of peripheral and central aural disease, but since then I have made several observations upon patients clearly affected with cinchonism, having, among other symptoms, great impairment of hearing, and in all the cases the bone conduction was greatly diminished, and only the aerial remained present to any extent.

I have offered no apology for the assumption, easily deduced from what I have said, that the neurologist is bound to attempt to differentiate between a central and a peripheral aural lesion. Many of the cases that present themselves to you have aural symptoms. None but the most narrow specialism can afford to pass over the investigation of these symptoms or to relegate them to the otologist. The capability to examine the membrana tympani, and the use of the tuning-fork, in the manner that has been indicated, will furnish the means, in the vast majority of cases, for an accurate differential diagnosis.

I may then recapitulate as follows the steps of the method which I have endeavored to demonstrate.

1. Determine the effects of noise upon the hearing power and sensibility of the patient. If noise increases, or does not diminish the hearing power, the case is probably a peripheral trouble. It is central if noise diminishes the hearing. If noise is painfully disagreeable it also points strongly to central disease of the ear.

2. Observe whether the patients hear the watch relatively as well as the voice. Those suffering from lesions beyond the tympanum usually hear the human voice out of all proportion to their ability to hear the tick of a watch.

3. Test the aerial and bone conduction by means of the tuning-fork C². If the vibrations be heard better and longer through the bone, it is only ex-

ceptionally that the disease is not peripheral. If, on the contrary, they be heard better through the air, the disease is one of the labyrinth or of the trunk of the nerve, or of the nerve centres.

A YEAR'S WORK IN LAPAROTOMY.¹

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DURING the year 1887 I had fifty-three laparotomies, as follows:

	Cases.	Deaths.
Ovariectomy	27	5
Oophorectomy	19	1
Hysterectomy	1	
Malignant tumor of omentum	1	1
Pelvic abscess	2	
Exploratory incision	3	
	53	7

With regard to the fatal cases I shall begin with those among my *ovariotomies*.

Case 194 was one of a small but malignant papillary cyst of each ovary. The papillary growths had penetrated into and through the wall of each cyst, and appeared in large masses on the surface, causing ascites, and infecting every abdominal organ. Intestinal adhesions needed three ligatures, and the application of Monsel's solution of iron. On the third day, obstruction of the bowels set in, followed by obstinate vomiting and great tympanites. The temperature kept natural, and the pulse under 100; yet, in spite of large doses of calomel and of belladonna, and of many turpentine enemas, the bowels were not moved, and the woman died on the seventh day.

Case 195 was that of a short but extremely fat woman. Two months before the operation she weighed 272 pounds, but had failed so much in health and strength that, at the time of the operation she weighed 254 pounds, and she could not walk without assistance. Owing to excessive deposit of fat in the abdominal wall, which was also edematous, the incision had to be a long one, as well as a deep one, and the area of raw surface made by the wound was the most extensive I have ever made, or have ever seen. Both ovaries, being diseased, were removed. The left one was a large, multilocular, papillary cyst, weighing about twenty pounds. Its whole anterior surface had contracted very firm adhesions to the abdominal wall. A considerable amount of ascitic fluid was present. As she was operated upon at her home in the interior of Pennsylvania, I did not see her again. She died, from peritonitis, on the fourth day.

Case 204 was in a very low condition at the time of the operation, which was undertaken in every sense as a forlorn hope. To allay her sufferings, she

¹ Transactions of the American Otological Society.

¹ Read before the Philadelphia Obstetrical Society, April 5, 1888.

had been tapped by her physician sixteen days before. At the time of the operation she was delirious, had a high septic fever, and suffered extreme abdominal pain. Her shrieks so disturbed the inmates of the University Hospital that she was removed to a room at a distance from the wards. The cyst was intraligamentary, weighing probably about twenty pounds, and it was adherent to the abdominal wall, the intestines, the stomach, the aorta, the womb, and to the whole pelvic basin. Which ovary was implicated I cannot say, for I was unable to find a pedicle, or to discover the second ovary. All the adhesions were severed, save those to the womb and to the pelvis, and these were not touched, as the woman seemed to be dying. During the whole operation, indeed, hypodermatics of alcohol and of ether had to be given frequently, to prevent fatal collapse. All the free portion of the cyst was cut off, the rest stitched to the wound, and a drainage tube put in. The patient never rallied, and died seven hours later.

Case 205 was one of colloid cyst, weighing thirty-three pounds. The woman had been tapped one month previously. At the time of the operation she was bedridden, greatly emaciated, and much prostrated by pain and sleeplessness. The cyst had burst some weeks before, and every internal organ was infected. The adhesions were universal. The peritoneal cavity was thoroughly cleansed, and a drainage-tube put in. She died on the eighth day, from sheer exhaustion.

Case 211 was one of suppurating, dermoid cyst, and had been bedridden for several weeks by an attack of peritonitis, followed by septic fever with night sweats. The cyst, weighing ten pounds, was full of hair, and a putrid matter which gave off an offensive odor. The walls were so rotten that they tore in several places, while very firm adhesions in the right loin were being severed. Hence, some of the contents of the cyst escaped into the abdominal cavity, which, however, was carefully washed out, and a drainage-tube put in. She died on the fifth day, from septicaemia.

Of my nineteen *oophorectomies* I lost one case, and that one on the fourth day, from suppression of the urine. It was one of papilloma of each ovary, and of the broad ligament. The operation was not a very difficult one, yet it was followed by suppression of urine and uræmic coma. Previously to the operation there had not been any symptoms pointing to renal disease, and the urine had not been examined, but kidney-mischief must have existed. Toward the close the patient's breath became excessively offensive, and she died at the end of three days.

Among my *oophorectomies* I had several difficult operations, both from adhesions, and from the presence of large uterine fibroids, for which the operation was performed. But I shall not enlarge upon these

cases, as I wish to defer their consideration for another paper.

Of the seven remaining laparotomies one resulted in death on the forty-eighth day. It was a case of malignant colloid tumor of the omentum, in a patient of Dr. I. W. Hughes, of West Philadelphia. Ascitic fluid was present in abundance, and the patient had been confined to her bed for many weeks, from attacks of great abdominal pain. From the hypertrophy of the omentum, from the excessive vascularity of the parts, and from intimate intestinal adhesions, the operation was one of difficulty. At the end of a week I left the city for my holiday. During that time, and for the following week, the lady did well; then fever set in, and, after a few days, a large, deep-seated abscess broke through at one end of the abdominal wound. Later on, another abscess burst into the large intestine, and she died from exhaustion, on August 16th, the operation having been performed on June 29th.

The other successful laparotomies consisted of two cases of chronic, pelvic abscess, in which the incision into the sac was sewed to the abdominal wound, and a drainage tube put in. In one of these a ventral hernia resulted. There were three cases of exploratory incisions. In one, a patient of Dr. George D. Nutt, of Williamsport, Pa., there was a painful fibroid or a sarcoma of the womb. On February 17th I attempted to remove her ovaries, but I could not reach them, on account of firm and deeply seated pelvic adhesions. In the second, a patient of Dr. J. S. Hunt, of Easton, Pa., the abdominal section was made to determine the character of a tumor, which was a carcinoma, probably of the kidney and of the adjacent intestine. The incision, being just large enough to admit two fingers, did not enable me to make out a precise diagnosis as to the organs involved. But, as the growth was unquestionably malignant, I did not feel justified in enlarging the wound. The patient, although seventy years old, recovered promptly from the operation, but she died a few months later. The third exploratory incision was in a patient from whom I removed, on February 14, 1885, a subperitoneal, fibroid tumor of the womb, weighing eight pounds. She remained well for some months, and then began to lose flesh and to suffer from severe abdominal pains. Several tumors could now be felt filling up the abdominal cavity, and she was urgent for an operation. So, although my diagnosis leaned to malignant disease, I opened the abdomen on March 8, 1887, before a ward class at the University. The growths proved to be a sarcoma of the womb and of the ovaries, these organs being so fused together that their removal was impossible.

The case of hysterectomy consisted of the removal of a subperitoneal fibroid of the womb, with a very short pedicle. While ligating the pedicle, I tore it partly off from the womb, and the bleeding that fol-

lowed could be checked only by the thermo-cautery. The tumor weighed about two pounds, and it was removed on account of the pain it gave, and the vesical irritation which it produced.

Among the twenty-seven ovariotomies there was a larger proportion of difficult cases than usual, nor did I decline a single case. In sixteen both ovaries were removed. Twenty-three had adhesions, and drainage was resorted to twelve times. In three of these the adhesions were universal; in six very firm intestinal adhesions existed; while in three the cysts were intraligamentary, presenting very embarrassing obstacles to their removal. In one of these cases of intraligamentary cyst the operation was not completed on account of the collapse of the patient, who died seven hours later. The other two recovered, but in one of these the wound had to be reopened four hours after the completion of the operation, in order to arrest a secondary hemorrhage from deeply seated pelvic vessels. The drainage tube told the tale of internal hemorrhage, otherwise the collapse would have been attributed to shock. In this case, also from injury to the rectum, a fecal fistula was established a few days later. Here again the drainage tube did good service to the woman, saving her life for the second time.

This formidable class of cysts needs a special treatment, which I described in a paper read before this Society a few months ago. It consists, firstly, in beginning the enucleation at the vascular portions of the cyst so as to cut off the blood supply early in the operation; secondly, in preserving the capsule of broad ligament as whole as possible; and, thirdly, in isolating the capsular cavity from the peritoneal cavity, by the sewing of the edges of the former to the abdominal wound and by the introduction of a drainage tube.

Special points of interest in my ovariotomy cases are as follows: Monsel's solution of iron was applied to oozing surfaces in Cases 194, 197, 198, and 209. In the first one it was applied to a bleeding intestine, from which the peritoneal coat had been stripped off. This patient died from obstruction of the bowels, due, as I believe, to a kink formed by the adhesion of the raw surface to some other viscus. I do not think that the iron salt had anything to do with the fatal adhesive inflammation. In the three other cases the iron was applied to oozing surfaces on the abdominal wall, and they all recovered promptly. Oozing raw surfaces on the bowels are often troublesome, and I have had to check the hemorrhage by fine ligatures, by Monsel's solution of iron, and by the thermo-cautery at a dull heat. Of all these modes I prefer the last when practicable. But when the oozing surface is a large one, or the bowel is not readily accessible, I prefer the iron solution as the safer remedy. Nor have I ever had any reason to believe that its action has been otherwise than benefi-

cial. Usually, in these cases, a drainage tube has been inserted, not because of the use of the iron styptic, but because of the extent of the adhesions demanding its use. In Case 198 a drainage tube was not employed.

There were three cases of colloid cyst which had burst into the cavity of the abdomen some weeks before the time of the operation. In Case 201 the left ovary had burst, and much colloid and ascitic fluid had escaped from the abdominal incision. Every abdominal organ had apparently become infected, as all peritoneal surfaces with which the colloid fluid came in contact were roughened with miliary prominences. The abdominal cavity was flushed with plain warm water and a drainage tube put in. The woman got well without a bad symptom, and, as far as I know, is now enjoying good health. In Case 205 the cyst had burst evidently from a fall, and the health of the woman began at once to fail. She rapidly grew weak and very thin, as if slowly poisoned. When she was brought to me she was wretchedly weak and emaciated, and apparently near her end. The operation revealed a colloid cyst which had burst and partly emptied itself. The cyst had universal adhesions, and every abdominal organ presented an appearance of infection analogous to that of the preceding case. The abdominal cavity was also flushed and drained. Fever did not follow the operation, but the patient grew daily weaker, and died on the seventh day from sheer exhaustion. Case 207 was also very weak and greatly emaciated. The feet were also swollen, and she was virtually bedridden. In the operation I mistook the thickened peritoneum for the wall of the cyst, especially as a large quantity of ovarian fluid and large masses of lymph had escaped from the incision into the supposed cyst, which was in reality the abdominal cavity. The peritoneum was, therefore, stripped up for some distance before the mistake was discovered. The wall of the cyst was thick, but it had wholly collapsed by an opening made into it by the outward growth of one of the papillomatous masses which it contained. Chronic peritonitis had been the result, and the intestines, covered with false membrane, were agglutinated into one small bunch lying near the stomach. Every organ in the belly was either affected or infected. Enormous quantities of dirty, ragged and broken-down false membrane filled up every nook and cranny of the abdominal cavity. Two handfuls were removed from under the liver, and many handfuls from Douglas's pouch. The contents of the abdominal cavity weighed fifty-four pounds. The stripped up portion of the parietal peritoneum was cut away, the belly flushed and drainage employed. The tube was removed on the third day, which was remarkably early, considering the gross lesions of the peritoneal cavity. The woman slowly recovered, and in the fifth week returned to her home in West Virginia.

TABLE OF TWENTY-SEVEN CASES OF OVARIOTOMY.

Total number.	Name and Residence of Previous Medical Attendant.	Age.	Condition.	No. of children.	Place of Operation.	Date of Operation.	Adhesions.	Ovary Diseased.	Weight of Tumor.	Length of Incision.	Drainage.	Result.	REMARKS.
190	Dr. E. Hopkins, Marshton, Pa.	35	M.	9	Private Hosp.	Feb. 5	Pelvic.	R. L.	15 lbs.	Short.	None.	Recovery.	
191	Dr. W. H. H. Githens, Philadelphia.	30	M.	4	"	Feb. 5	None.	R. L.	12 "	"	"	"	
192	Dr. F. F. Smith, St. Augustine, Fla.	59	W.	2	"	Feb. 10	Pelvic.	R.	13 "	"	"	"	
193	Dr. C. A. Rahter, Harrisburg, Pa.	32	S.	...	Home.	Feb. 20	None.	R. L.	3 "	"	"	"	Dermoid cyst full of hair.
194	Dr. W. W. Ives, Scranton, Pa.	48	M.	3	Private Hosp.	Mar. 2	Intestinal.	L. R.	6 "	"	Yes.	Death.	Malignant papilloma of both cysts, with dropsey.
195	Dr. J. B. Marshall, Shippensburg, Pa.	43	M.	1	Home.	Mar. 11	Parietal.	L. R.	20 "	"	"	"	Malignant papilloma; died from peritonitis.
196	Dr. W. Goodell, Philadelphia.	42	M.	5	Univers. Hosp.	Mar. 25	Omental, intestinal.	L.	15 "	Long.	"	Recovery.	Semi-solid cyst; ascites.
197	Dr. S. S. Good, Meyersdale, Pa.	39	M.	4	"	Apr. 1	Omental, parietal.	L.	12 "	Short.	"	"	One tapping.
198	Dr. A. Wood, Lentner, Mo.	53	M.	8	Private Hosp.	Apr. 10	Parietal.	R. L.	22 "	Long.	None.	"	
199	Dr. W. W. Johnson, Ches.	19	S.	...	Univers. Hosp.	May 4	None.	R. L.	12 "	Short.	"	"	
200	Dr. J. D. W. Henderson, Malvern, Pa.	60	M.	4	Private Hosp.	May 13	Omental.	L. R.	17 "	"	"	"	
201	Dr. C. W. Bachman, Reading, Pa.	30	M.	3	Univers. Hosp.	May 16	Omental.	L.	56 "	"	Yes.	"	Ruptured colloid cyst, infecting the whole peritoneum.
202	Dr. Shiner, Tamaqua, Pa.	35	M.	9	"	May 23	Omental, intestinal, pelvic.	L.	15 "	Long.	None.	"	
203	Dr. M. Christine, Philadelphia.	35	M.	4	Private Hosp.	June 2	Parietal, uterine, and ligamentous.	L. R.	28 "	"	"	"	Intra-ligamentous cyst.
204	Dr. A. S. Reynolds, Philadelphia.	35	M.	...	Univers. Hosp.	June 6	Universal.	?	26 "	"	Yes.	Death.	Intra-ligamentous cyst; incomplete operation; tapped once.
205	Dr. W. D. Hilliard, Ashville, N. C.	48	M.	10	Private Hosp.	Sept. 1	Universal.	L.	33 "	"	"	"	Burst colloid; every abdominal organ affected; tapped once.
206	Dr. G. S. Mitchell, Cincinnati, O.	52	M.	...	"	Sept. 4	Universal.	R.	30 "	"	"	Recovery.	Intra-ligamentary cyst.
207	Dr. R. W. Daily, Romney, W. Va.	62	M.	9	"	Sept. 6	Parietal.	R.	54 "	"	"	"	Burst papillary cyst infecting every abdominal organ.
208	Dr. J. R. Umstad, Lower Providence, Pa.	60	M.	6	Home.	Sept. 10	Parietal.	L. R.	21 "	Short.	None.	"	
209	Dr. H. M. Nipple, Selinsgrove, Pa.	44	M.	5	Private Hosp.	Sept. 18	Parietal.	L. R.	24 "	"	Yes.	"	Tube used on account of oozing; tapped once.
210	Dr. W. W. Dawson, Cincinnati, Ohio.	20	S.	...	"	Sept. 27	Omental.	L. R.	15 "	"	None.	"	Tapped twice.
211	Dr. J. Grove, Philadelphia.	50	M.	2	"	Oct. 27	Omental, and parietal.	L.	10 "	Long.	Yes.	Death.	Suppurating dermoid cyst.
212	Dr. E. Bennett, Barnegat, N. J.	41	S.	...	"	Nov. 22	Parietal.	R. L.	35 "	"	None.	Recovery.	
213	Dr. D. A. Hogue, Houtzdale, Pa.	33	M.	5	Univers. Hosp.	Dec. 5	Parietal, omental, intestinal.	R. L.	20 "	"	Yes.	"	Right cyst gangrenous from torsion; left cyst dermoid.
214	Dr. L. Schwerz, Philadelphia.	49	M.	4	Home.	Dec. 10	Parietal, intestinal.	L. R.	22 "	Short.	None.	"	
215	Dr. E. L. Welling, Pennington, N. J.	26	M.	4	Univers. Hosp.	Dec. 16	None.	R. L.	30 "	"	"	"	
216	Dr. W. F. Shine, St. Augustine, Fla.	49	M.	...	Home.	Dec. 24	Omental, parietal, intestinal.	L.	20 "	"	"	"	Had septicæmia at time of operation; had three tapplings.

In Cases 196, 211, and 213 the cyst burst during the process of breaking up adhesions, and some of the fluid escaped into the belly. In all such cases, although the danger is, in my opinion, overrated, I carefully cleanse the peritoneal cavity by pouring into it several jugfuls of warm water; but I do not always use a drainage tube. In Case 211 the cyst—a broken-down dermoid—contained putrid fluid, and the woman died, although drainage was resorted to. This case was, however, a bad one; the woman labored under septicæmia at the time of the operation, being, in fact, confined to her bed, and her death is attributable more to that cause.

The after-treatment of my cases of laparotomy is a simple one. For thirty hours nothing is given by mouth save teaspoonful doses of whiskey in a tablespoonful of water, and then only when needed by delayed reaction. Milk, beef-tea, and whiskey are, however, given freely by rectal enemata when indicated by extreme thirst or by feebleness. After thirty hours have elapsed, milk or beef-tea is given by the mouth in gradually increasing amounts.

I try as much as possible to avoid the use of opiates, and usually can get along without them. But I have to leave the decision of their administration to the skilled nurses who attend my patients; for in some cases it would be cruel and even dangerous to withhold opiates when the sufferings are acute. This anodyne is given either in a rectal suppository or in the nutrient enemata when they are needed.

LOCOMOTOR ATAXIA CONFINED TO THE ARMS: REVERSAL OF ORDINARY PROGRESS.¹

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

E. C. B., M.D., of California, aged fifty-five, was in active practice until two years ago. He has no constitutional disease of any description. By his own description he was a well man up to July, 1887, possessing nearly perfect health. Near to that time he observed that, in writing with a steel pen, his hand began to change—becoming unsteady. There was no tremor, certainly none manifested in his handwriting. He only discovered that there was slightly increasing numbness in the cushions of the finger-ends of both hands, extending through the hand, up into the arm, through the chest and down over the belly and back. About September 20th, this was slightly present in the toes, but more distinctly afterward. There seem to have been no preceding eye or bladder symptoms, nor, indeed, any warning such as usually attends an outbreak of locomotor ataxia. The character of the case has not greatly changed since the first attack; it has only shown more decisively its nature. Perhaps the best description I could give of it would be that which I take from my note-book of January 15, 1888. To

make clear what follows, I will state that the case is in my experience exceptional. I have seen none which I could place alongside of it. It consists of an attack of locomotor ataxia affecting practically the upper extremities. In other words, the legs now show the same condition which one is apt to see in ordinary cases of this disease in the arms after the legs are pretty well on their course of degenerative change.

Nutrition.—This gentleman weighs one hundred and thirty-eight pounds; has lost twenty pounds; his height is five feet nine inches; his limbs are thin; throughout the body the muscles are more or less flabby, notably in the upper extremities, but nothing to be called atrophy; the legs are liable to swell slightly during the day; the arms are more liable to be swollen after sleep. The patient, an accomplished physician, declares the swelling not to be at any time edematous. It offers slight resistance to pressure, and but a part of the swelling is due to serum. There is an appearance of yellow pallor about him which caused me to request Dr. John K. Mitchell to make an examination of the blood. The result surprised me. The corpuscles amount to 3,980,000 per c.cm.; the coloring matter is seventy-five per cent. of the normal, by Fleischl's test. Certainly the appearance of the skin would seem to indicate a want of blood not shown to exist by accurate test, repeated again and again. This condition of things I have several times seen in posterior sclerosis, a not excessive want of color or corpuscles, and a whiteness of skin and mucous surfaces which once we would have accepted as sure evidence of anæmia.

Sensation.—There is no pain of the character of neuralgia. He says that since his boyhood he has been liable to aches in the great trochanter and between the shoulders.

Touch.—At a half inch the compass points begin to be felt as two in the finger of either hand. There is no remarkable difference between the two hands. The sensation of numbness with which the disease began is, perhaps, more pronounced in the legs now than at first; but about the clavicles the sensation in all kinds appears to be normal; also it is fair for heat and cold, but decisions as to these are less rapid in the arms than in the legs. The pain sense is everywhere preserved. I ought to add that when the left hand is chilled it is apt to cause pain to run up the arm on that side. The special senses appear to be normal.

Dr. G. E. de Schweinitz gives the following statement of the eye conditions: "Vision in each eye with correcting glasses, normal; no disturbances of accommodation and his reading glasses allow comfortable range; three degrees of insufficiency of the interni; no other muscular anomalies, except slight drooping of the right upper eyelid. Pupils present normal reactions for light and accommodation; ophthalmoscope shows fine floating vitreous opacities; distinctly gray optic disks with hazy edges and general epithelial choroiditis. Form fields are normal; there is concentric contraction of the color fields. From these facts I conclude that there is beginning gray degeneration of the optic nerves, as well as disturbances of the choroid and vitreous humor."

¹ Read before the Philadelphia Neurological Society, March 26, 1888.

Motion.—Motion is generally weak; when he walks any distance he moves slowly, and in action the arms tire more easily than the legs. He stands well with his eyes open; but with his eyes shut he sways one inch to the right and an inch and a half forward, so that his station may be stated to be good for a man in his condition. It certainly shows how little ataxic trouble there is in the lower limbs. He moves the legs well, and the common actions of the feet exhibit little incoordination in these parts. On the other hand, the upper limbs are awkward in their movements. There is a great lack of coördination in every effort to make delicate adjustments, as when he attempts to touch his nose or ear with the eyes shut or to bring the forefinger of his right hand in contact with the tip of the little finger of the left hand. He fails also in the test of weights; he is unable to tell the difference between an ounce placed in his palm and a half ounce, or an ounce and a half. I took tracings of his efforts to hold a pencil steady. They showed no tremor—less than is common, and this negative symptom is a remarkable one in ataxics. The effort to draw a from right to left resulted in a singular illustration of defective coördination.

Electrical reactions.—There are no unusual peculiarities.

Muscular reaction.—All the muscles of the arms react to a direct blow, but are incapable of being reinforced by motion. The leg muscles have, as I judge, about the normal amount of response to the hammer blow, but are readily reinforced by hand motions. It is interesting to contrast these conditions of the leg and arm muscles. Elbow-jerk is lost on both sides, and non-reinforceable by motion or sensation. Knee-jerk is *excessive* on both sides and is easily reinforced. Ankle-jerk is also extreme, and when powerfully reinforced a slight clonus exists. Thus, if the tip of the foot be pushed upward so as to stretch the tendo Achillis, the blow on it results in two or three forward movements of the foot; at the same time, the patient makes a powerful motor reinforcement. I remark in this case, as I have done in others, that a blow on the left patellar tendon gives rise to motion in the left leg, also to what seems to be a reflex jerk of the left arm. I suspect that this phenomenon is due to the strong reinforcements produced by emotion; for, while it is frequently seen in the first interview with the patient, it may be impossible to evolve it at another sitting.

Secretions.—Generally normal; occasional diarrhoea; no painful gastric crises. There is no trouble with the bladder or rectum. Sexual power is lost.

Reflexes.—Skin irritations of the soles of the feet appear to cause no motion. Testicle reflexes absent, as also abdominal reflexes.

REMARKS.—This case stands alone in my experience. It is a locomotor ataxia beginning in the arms. These lose their tendon reactions, but show excess of direct mechanical excitability. In the legs we find excessive knee-jerk and normal mechanical responses. The conditions seen in common cases of ataxia are here reversed. I have little doubt that in

the earliest stages of this disease the tendon reactions are excessive.

SIX CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.¹

BY CHARLES K. MILLS, M.D.,

AND

W. C. CAHALL, M.D.,
OF PHILADELPHIA.

Of the six cases briefly detailed in this communication, five were observed at the Falls of Schuylkill, Philadelphia, and one in the southwestern portion of Philadelphia. At the Falls of Schuylkill several other cases have recently been observed, and it is interesting to recall that it was in this neighborhood, during 1864 and 1865, that the disease was widely prevalent and very virulent. In the first case an elaborate autopsy was made, which gives the case a distinct scientific value; in the other cases, certain special points of interest make them worthy of being recorded. They are reported briefly so as not to load the paper with unnecessary details. The first four cases occurred in the practice of Dr. Cahall, and two of them were seen by Dr. Mills in consultation; the fifth was a patient of Dr. J. V. Kelley, of Manayunk, Philadelphia; the sixth was a patient of Dr. J. W. Dick, and was seen several times by Dr. Mills in consultation.

Case I.—Mrs. W., aged thirty, the mother of three children, had had bad health since the birth of her last child, now two years old. She was greatly depressed in spirits and imagined she had all sorts of diseases, but for a few months she had regained, to a considerable degree, her former health and spirits.

February 21, 1888, she was taken with chills and headache, and on the morning of the 22d, when first seen by Dr. Cahall, she complained of acute pains down both legs, but more intense in the posterior aspect of the knee-joints, any movements of the limbs causing her to scream with pain. She already had headaches, contraction of the muscles of the neck; and ten to fifteen irregularly shaped spots of a color from pink to purple, and from the size of a pea to a silver dime, were scattered over the legs and abdomen. Diarrhoea, abdominal distension, and tenderness were present from the first. Delirium came on by the morning of the 23d, with lucid intervals, when she said she saw everything double. All the other symptoms were intensified.

On the 24th she was totally blind and partially deaf, but when aroused could give sensible answers to questions. She still complained of the headache, but not of the legs unless pressure was made along the course of the nerves, when she would cry out as though suffering great pain. The pulse was rapid, but the temperature was never over 103°. There was general hyperesthesia.

¹ Read before the Philadelphia Neurological Society, March 26, 1888.

On the 25th she sank into a stupor, from which it was gradually more and more difficult to arouse her. She died upon the morning of the 29th, on the eighth day of her sickness.

Dr. Mills saw her in consultation the day before her death.

Autopsy.—Drs. A. H. P. Leuf and Judson Daland performed the autopsy, at which the writers were present, and examined the specimens. The following are the results of the megasscopic examination.

Brain: The pericranium was very vascular. The veins of the dura mater were gorged with dark venous blood on the outside, and the inner side of the membrane showed marked arterial injection. It was adherent to the convexity of the right hemisphere at the upper border of the quadrate lobule. In front of this on both sides, were Pacchianian adhesions of the dura to the brain. The anterior lobes of the brain, especially on their convexity near the great median fissure, were oedematous, with a few slight opacities of the pia. At the base was seen liquid and semi-liquid pus about the optic chiasm, interpeduncular space, pons, and oblongata. The auditory and facial nerves were bathed in pus, as were, in fact, all the nerves at the base of the brain except the olfactory. All the cranial nerves were soft, especially the olfactory and optic. Softening of the crura cerebri, pons, crura cerebelli, and oblongata was also decided. The pia covering the isthmus was intensely injected, but this could only be seen by the removal of the pus that covered it. The arachnoid between the medulla and cerebellum was also covered by a thick layer of pus.

The puncta cruenta were well marked, numerous, and dark. The basal ganglia were normal, except some venous puncta. The fornix was softened. The fissure of Sylvius presented nothing abnormal on either side when opened for inspection; and all the cerebral vessels appeared normal.

Spinal cord: On opening the spinal canal, the cord lay flat and spread out in its membranes, instead of being narrow for the canal, and bulging with well-marked convexity. The dural vessels were well injected externally and internally. On section of the dura pus exuded freely. The membranous coverings of the spinal nerves within the canals were almost ecchymotic. This was most noticeable in those given off opposite the lumbar enlargement, and especially on the left side. The whole cord was surrounded with yellow creamy pus. The lower half of the back of the cord was covered with a yellow gelatiniform pus layer, while the same covering was found on only the lower two inches in front. All the pus was situated between the dura and pia. The anterior and posterior spinal vessels were gorged with blood, and there was a fine injection of the arterioles of pia and dura. A few adhesions between the pia and dura were noticed behind, but many throughout the whole length of the cord in front.

Peripheral nerves: The lower end of the left sciatic in its two divisions (the internal and external popliteal) were removed; they were marked externally by several distended bloodvessels. On the right side this was not so noticeable as on the left. The

second, third, and fourth digital nerves of the dorsum of the right foot presented nothing abnormal, but slight pressure at the end with forceps caused some blood to appear. The same was true of the second and third digits of the dorsum of the left foot.

Muscles: A piece of muscle was excised from the lower end of each semimembranosus. To the naked eye it presented nothing abnormal.

Thoracic and abdominal viscera: Careful examination showed the lungs to be crepitant throughout and apparently entirely normal. The pleural cavities were free from effusion. A few adhesions were present on the right side, and numerous adhesions on the left, many of which were evidently quite old.

So far as could be determined by careful naked-eye examination, the heart and aorta, intestines, liver, and kidneys were normal.

The stomach was normal in size, but here and there, under the mucous membrane, were seen small extravasations of blood. The spleen was twice its normal size, but of firm consistence, and its capsule normal. The uterus and its appendages were normal in size, shape, and position. The endometrium was somewhat thickened, and of a dark red color; there were considerable submucous extravasations of blood.

Marked evidences of recent moderate, adherent peritonitis were found. This was particularly noticeable on the surface and between the coils of the small intestine. At no place did the layer of lymph exceed the thickness of a sheet of paper, and the peritoneal cavity contained no liquid effusion.

A small drop of purulent-looking substance from the thick exudation covering the spinal cord was examined microscopically by Dr. Daland, and showed numerous leucocytes imbedded in a gelatinous-like substance, probably lymph; apparently there was not as much pus as would be expected from the marked yellow color.

CASE II.—N. W., aged eleven, daughter of Mrs. W. (Case I.), was of a nervous disposition inherited from her mother.

Three days before her mother's death the child was taken suddenly ill with pain in her left leg below the knee, particularly severe around the ankle-joint. Slight redness and swelling were perceived about this joint.

Tincture of opium and sodium salicylate were prescribed, and on the following morning the leg was much better, but her neck was painful and drawn to the left side, from contraction of the sterno-cleidomastoid muscle. There was tenderness along the spine from between the shoulders to the occiput. She did not suffer with headache and had no delirium. The special senses remained normal. The bowels were constipated. In the evening a slight rise of temperature was noticed, but her pulse was slower than normal.

Under ordinary circumstances the case would probably have been dismissed as an ordinary one of rheumatic or neuralgic torticollis, but the patient's mother was lying up stairs with an undoubted attack of cerebro-spinal meningitis, which had commenced in a similar though more violent manner. This aroused

suspicion as to a similar cause for the two attacks. An eruption was looked for, but did not appear until the fourth day, when five spots, two pink and three purple, made their appearance on the legs and lower part of the abdomen.

The tincture of opium and sodium salicylate were continued in moderately large doses. Friction and counter-irritation were used upon the neck, but the contraction and tenderness on pressure remained in a marked degree for several days, and did not finally disappear for several days longer.

CASE III.—M. M., aged twenty-four, a mill-girl, had a history both in herself and in the female portion of her family, of a highly nervous temperament. On the 16th of January, while enjoying her usual health, she had gone to her work. During a passionate debate among the employés as to the advisability of a strike, which she opposed, she proceeded, with the others, to the sidewalk, laboring under great mental excitement. The day was very cold, and shortly after reaching the windy street, she fell to the pavement screaming with a pain in her neck. She was taken to the house of a neighboring physician, who gave her two hypodermatic injections of morphia, after which she was brought home. At first she complained of nothing except the intense pain in the neck. The head was drawn backward. She had no fever; pulse 60. The day following her neck was about the same, while an intense headache of a constricting character was added. The mental faculties were clear and all the functions of the body were well performed. Fever was still absent, and pulse 60.

After the use for two or three days of morphia, bromide, and chloral, without the slightest improvement, hysteria was suspected, but later a genuine organic disease seemed manifest. At about the end of a week she complained of great pain in both legs, and especially upon pressure over the nerves. Dr. Mills saw her at this time in consultation. While the pain in the legs continued the headache and neckache were greatly lessened. Morphia, sodium salicylate, and oil of gaultheria were given, under which the pain in the legs disappeared. The headache never returned with its first intensity, but an active delirium took its place. Illusions and delusions kept her in a state of excitement for days with scarcely any sleep, in spite of large doses of anodynes. The drawn state of the neck was persistent. Fever came on, although never high. The pulse continued slow.

The patient drifted from bad to worse. The active delirium gave place to a heavy stupor, when it was difficult to administer either medicine or nourishment; but as nourishment was considered the most pressing need, it was regularly and persistently forced upon the patient. A flea-bite eruption appeared on the arms, face, and neck, but not until after the second week. The eruption would disappear and reappear, but never so distinctly as at first.

For three weeks longer, or to the fifth week of the sickness, the patient's mental condition remained practically unchanged. Iodide of potassium, 5 grains and bichloride of mercury $\frac{1}{16}$ th grain were given three times a day. In three days the girl's mind

was perfectly clear, and she remembered her sickness only as a disagreeable dream.

CASE IV.—R. L., aged nineteen, a mill girl, was taken suddenly ill while at her work upon the 1st of March. An intense headache followed by chills ushered in a high fever. Her temperature was 103.5° the first evening. She complained of pain in the limbs and neck, but there was no contraction of the muscles of the neck until March 3d. Nausea and vomiting were present during the first three days, and during the nights of the same days the patient was delirious.

Pills of opium and quinine, with an effervescent fever mixture, reduced the temperature by March 4th to 100° F., above which it never again rose. From the 4th to the 9th the case remained at a standstill. The headache was greatly better, but the contraction of the muscles of the neck was increased, fixing the head immovably backward. Hyperesthesia and deep-seated pain upon slight pressure were present over the whole posterior region of the neck. The patient complained of feebleness and exhaustion. On the 9th, the opium and quinine were given at longer intervals, and iodide of potassium 5 grains, and bichloride of mercury $\frac{1}{16}$ th grain, four times a day.

In two days the patient was sitting up with fever gone, neck greatly relieved, and appetite and sleep returned. Her convalescence was from this date forward rapid and complete. No spots were found in this case.

CASE V.—Notes of the following case were furnished by Dr. J. V. Kelley, of Manayunk, Philadelphia:

The patient, a young man, was first seen February 18, 1888. He was in good health until the preceding day, when in the evening he was taken with a chill, vomited twice, and had two stools. He worked during the forenoon of the day he was taken sick, although feeling very badly. At 2 P.M., when first seen by Dr. Kelley, he was in bed and complained of great soreness. He complained of tenderness, confined to the abdomen, so much so that the case was at first thought to be one of enteritis. He was very cold; pulse 134 , and he seemed much prostrated. He was placed on brandy and tonics, and the next day in a manner revived.

February 20th, he was seen by Dr. Bruen, who thought the case to be one of cerebro-spinal fever. Herpes labialis was beginning to show. The next day he had some delirium; his pulse was still 134 .

On the 22d, he was seen by Dr. Pepper, who agreed that the case was one of cerebro-spinal fever. Herpes labialis was now profuse, some delirium was present, and hearing and sight both defective. He had two offensive stools, and complained of great general soreness, but had no characteristic spots, although there was a vesicular eruption on the chest. He had no retraction of the head, although his neck was somewhat stiff. His abdomen was tympanitic, and this persisted until death occurred, February 28th.

About the fifth day of his seizure the patient complained of blindness. On one occasion he bled from the nose and spat some blood. No lung or heart symptoms could be demonstrated by examination,

and the man died from prostration on the eleventh day of the disorder. He showed typhoid signs, but the case was certainly not typhoid fever. The treatment was by stimulation and tonics, with full feeding. Brandy, quinine, digitalis, opium, and turpentine were given.

CASE VI.—The following interesting case occurred in the practice of Dr. J. W. Dick, and was seen by Dr. Mills several times in consultation. The patient, R. A., a boy eight years old, in the latter part of October, 1887, had an attack of mild scarlet fever, followed by slight nephritis, which kept him in the house until the last of December. After this time he began running out of doors in all sorts of weather, in his play sometimes lying down in the snow. He seemed to be in the best of health until February 2d, when he was suddenly taken sick at school. He came home complaining of violent headache, and was taken down also with vomiting and high fever, with marked delirium. The delirium soon subsided, and he sank into a semi-conscious condition. He would not answer, as a rule, any question or demand, but sometimes ask for a drink, and he would give notice when he wished to evacuate the bowels or bladder. On the fourth day an eruption appeared over the entire body, more especially marked on the face, neck, and upper extremities. The eruption consisted of small pin-point, fleabite-like spots, which did not disappear on pressure. It faded in about four days after its first appearance.

His temperature varied at first from 103° to 105° F., sometimes higher in the morning than in the evening, and sometimes the reverse. The following is the temperature record from February 17th to 26th:

February.	Morning.	Evening.
17th	104.4°	104° F.
18th	104.4	103.8
19th	103.6	103.6
20th	102.6	103.2
21st	102.4	102.6
22d	102.4	101.6
23d	102	102
24th	101	101
25th	101	101
26th	101	101

After this his temperature showed a tendency to fall, and came down to 99.5° .

His pulse was weak, but regular, varying usually from 112 to 120. His respirations ranged from about 30 to 40. The vomiting lasted only during the first day, after which he took and retained both food and medicine. His bowels were usually slightly constipated, but responded freely to enemata. After February 2d he did not attempt to speak, but lay in a comatose condition, with frequent sudden outcries, as if in pain. His abdomen became decidedly scaphoid. He was troubled with a cough throughout his entire sickness. There were abundant mucous râles, with a little dulness on percussion on the right side.

In the beginning of his sickness the slightest movement gave rise to intense pain. This gradually subsided, but he continued throughout to have great tenderness on pressure in the region of the neck and in the legs. The pain in his lower extremities was

a very marked symptom; handling them, and pressure along the nerves or squeezing of the muscles, caused great suffering. No swelling of the joints was present. He exhibited some pain and tenderness in the upper extremities, but not nearly as marked as in the lower; the knee-jerks were retained. He could move the legs up and down freely, but the feet had a tendency to assume the equino-varus position; this foot-drop was more marked on the right side. No paralysis of the cranial nerves was present. For three weeks before his death he was apparently both blind and deaf; for a short time he had a slight discharge from the left ear. He died on the thirty-sixth day.

REMARKS.—These cases are of considerable interest from various points of view, but we shall only be able to call attention to a few of the most important features. At a former meeting of the Society it had been suggested by Dr. Mills that neuritis was probably present as a complication or coincidence in some of the cases, and in others the infectious agent caused a multiple neuritis rather than a cerebro-spinal disease. As no microscopical examination has yet been made from the specimens of Case I, we are not able to say positively that neuritis was present, but the gross examination of the sciatic and other nerves led to the suggestion that either congestion of the nerves or neuritis was present.

A few words might be said with reference to treatment. Bromide of potassium, in half-drachm doses, failed to relieve the headache or produce sleep in the severe cases (the same result followed chloral). Nothing definite can be said as to the effect of quinine. Sodium salicylate and oil of gaultheria gave relief to the neuritic pains in the legs, but produced no appreciable benefit to the head and neck. Opium and morphia did positive good in every case, but after the more acute symptoms had passed the good effect seemed to be lost. In the two cases where iodide of potassium and the bichloride of mercury were used by Dr. Cahall, the effect was surprising to patient and physician alike. The improvement was too rapid to be the result of the alterative properties of the drugs, but more like the action of specific remedies.

MEDICAL PROGRESS.

When to give Digitalis.—The *Medical Press* writes that it has been observed that he who discovered and laid down rules for the administration of digitalis would be doing infinitely greater service to the profession than they who encumber therapeutics with new and untried though much belauded "cardiac tonics." There are difficulties in the way of any comprehensive directions for the employment of this drug, because it is sometimes observed clinically to produce distinctly beneficial results in cases where theoretically its effects are contraindicated. Dr. James Stewart has recently suggested a sign of value which we commend to practitioners. He points out that

in cases of heart failure too pronounced to allow of resort to alternate methods of treatment involving exercise the best results are obtained by rest in bed with full doses of digitalis, the supply of liquids being curtailed to the minimum. The first marked effect of cardiac failure is a fall in the aortic blood-pressure leading to diminished excretion of urine and a lowering in the vital processes generally. The diuretic power of digitalis is directly dependent on its influence in restoring the diminished pressure, and to effect this the drug must be given in full doses. The important fact to bear in mind is that when the amount of urine falls, after increasing, under digitalis, the administration of the drug should at once be suspended. The failure in the renal excretion may be taken to indicate that the heart is incapable of reacting further to the stimulus, and serious risk attends non-attention to this rule. The amount of the drug and the time required to bring about this secondary fall varies greatly according to the susceptibility of the individual to its effects. Forty minimis of the tincture four times daily for three days are generally sufficient, but as much as half an ounce daily in divided doses is sometimes required. Scilliain and mercury are both direct diuretics, and are very useful in conjunction with digitalis. Caffeine is another useful diuretic, and a combination of caffeine with digitalis is very highly spoken of. In these observations we have several points of practical importance in the treatment of a very difficult class of cases.

Extirpation of the Kidney for Sarcoma; Recovery.—At a recent meeting of the Society of Physicians of Vienna von FRISCH exhibited a patient from whom, four weeks previously, he had extirpated the left kidney for sarcoma. The patient had first observed a tumor beneath the margin of the ribs on the left side four months before the operation, which grew rapidly. When brought under observation a hard, non-sensitive and immovable tumor was found, which extended from the border of the ribs to the anterior superior spine of the left ilium; it gave the patient no inconvenience, and when punctured by an aspirating needle gave clear blood. An incision was made from the xiphoid process to the umbilicus, and a second incision at right angles to the first exposed the tumor; many adhesions required separation; bleeding points and the pedicle of the tumor were ligated. The tumor weighed six pounds, and proved on microscopic examination to be a round-celled sarcoma containing giant cells. Prompt recovery followed. The wound healing by first intention.—*Wiener medizinische Presse*, March 25, 1888.

Formulae for Prescribing Iodoform.—The *Centralblatt für die gesammte Therapie* for April, 1888, gives the following formulæ:

In pill form,

Iodoform,	aa gr. 30.
Cort. cinnam.	aa gr. 30.
Extr. cascarill.	3.

Ft. pil. 60 in num.

Sig.—Three pills daily.

Iodoform and potassium iodide may be thus given:

Iodoform.	part 1.
Potass. iodid.	parts 70.

Triturate carefully and add

Glycerin.	parts 70.
Spts. vini. rectif.	parts 200.

Dose, fifteen drops on sugar, three times daily.

Successful Reimplantation of a Trephined Button of Bone.—BURRELL describes a recent trephining, in which the button of bone was successfully replaced, as follows, in the *Boston Medical and Surgical Journal* of March 29, 1888: The trephining was an exploratory one done on a boy, aged thirteen, to determine the presence or the absence of a depressed inner tablet of the skull that might have accounted for a group of existing cerebral symptoms. Operation: the child was etherized and the localization lines were drawn by Dr. W. N. Bullard; a large semilunar incision was made with the base downward, including the cicatrix; a second incision was made through the periosteum, and this was completely and freely elevated from the bone, which was then removed with a large trephine: no fracture was detected, and no abnormal appearance of the dura mater was found; an exploratory puncture with a trocar was made into the cerebral substance in the direction of the median portion of the ascending frontal convolution, entering, perhaps, four inches—no result. The bone, which had been carefully preserved in an antiseptic solution, was then carefully replaced in the skull, the periosteal flap was secured in position by a fine continuous catgut suture, and the overlying structures were similarly dealt with. Drainage being secured in the scalp by a dozen or more strands of catgut, an antiseptic dressing was applied, and the recovery from a surgical standpoint was uneventful. When the dressing was first removed at the end of two weeks, the wound was found completely united; for a short time after this a dressing was kept on the boy's head as a protection against any injury to the recently repaired structures. The child's cerebral symptoms gradually grew worse, and he finally died in the Boston Lunatic Hospital, in December, at the expiration of nearly eight months after the trephining.

Congenital Facial Paralysis.—DR. B. H. STEPHAN, of Zaandam, publishes in the *Weekblad* of the Dutch *Tijdschrift voor Geneeskunde* an account of a rare case of congenital facial paralysis, the explanation of which is very obscure. The subject was a woman to whom her mother had given birth before the arrival of the medical man, the labor having, of course, been a simple, and not a prolonged one. It was very soon noticed that the two sides of the face were different in appearance, the left being "like a mask," in striking contrast to the right, which was "full of expression." The condition remained unchanged as she grew up. When seen by Dr. Stephan, the pupils were equal, and reacted equally to light. There was but little difficulty in eating or drinking, owing to practice. Sensation was equal on the two sides. The hearing was, however, somewhat dull on the left side. No difference could be detected in the tympanic membrane. Dr. Stephan, on looking up the subject in medical literature, was unable to find any description of a precisely similar case. Professor Hensch, who mentions the existence of congenital facial paralysis in his lectures on the diseases of children, on being communicated with, replied that he had scarcely ever seen a case

reported, and that he did not know of any description which had been published. Dr. Stephan believes that there are three forms of congenital facial paralysis, two of which are transient, and depend on the application of forceps or the pressure of a tumor, etc., during a prolonged labor, and a third, of which his own case is, perhaps, the only described instance, where the paralysis is permanent, and where it may, as he suggests, depend upon necrosis, the main difference between this and the other two forms being the affection of the hearing, which may, he believes, be an indication of the permanent character of the paralysis, its existence in any case being sufficient to cause the practitioner to give a guarded prognosis.—*British Medical Journal*, March 24, 1888.

Quinine, Hypodermatically.—BEURMANN and VILLEJEAN, in the *Bulletin de Thérapeutique* of March 30, 1888, conclude that when *neutral* hydrochlorate of quinine cannot be readily procured the *basic* hydrochlorate, commonly found, may be used in the following prescription :

Acid. hydrochloric. pur.	..	..	m. 75.	
Aqua destill.	..	..	3 3 $\frac{1}{4}$.	
Quinine hydrochlor. (basic)	..	..	3 5.	

Dissolve at gentle heat and filter.

Fifteen minimis of this solution contain seven and one-half grains of *neutral* hydrochlorate of quinine.

The Effect of Tight Lacing on the Secretion of Bile.—COLLINS writes in the *Lancet* of March 17, 1888, as follows :

In the course of a series of observations upon the secretion of bile, which I have undertaken at the instigation of Dr. Lauder Brunton, I had occasion to make biliary fistulae upon several anaesthetized guinea-pigs. I was very soon struck by the considerable effect which respiratory movements had upon the passage of bile along the canulae. With each descent of the diaphragm there was advance of the column of bile, and with each expiration a slight retrogression or arrest of advance. Moreover, a powerful respiratory exertion considerably augmented the outflow, and even the slightly accelerated respiration which accompanied the administration of ether was not without its distinct effect. It occurred to me to see what would be the result of placing a constricting band around the lower part of the thorax. I accordingly selected a guinea-pig in which the biliary discharge from the canula was free and in full quantity, and I collected the amount of bile secreted at regular intervals until a fair average could be obtained. I then tied a tape band about one inch wide round the guinea-pig's waist (if such, by courtesy, can be allowed to exist), reducing the circumference thereof from five inches and a quarter to four inches, but not so as to cause any formidable risk of dyspnea. After collecting the bile secreted at stated intervals, I removed the "stays" and again collected as before. I found that before the tight lacing began bile was being secreted at the rate of 8.4 cubic centimetres per hour; during the tight lacing this fell to the rate of 4.5 cubic centimetres per hour, and after the removal of the constriction again rose to 7.8 cubic centimetres per hour. I repeated the experiment in other animals with the same result; so that it would appear that by reducing the circumference of the lower part of the thorax by about one-fourth, the bile secretion is reduced about one-

half. It is useless to assert that it is bile expulsion, not bile secretion that we are dealing with here, for the bile being secreted at a pressure very slightly above that of blood pressure, the mere presence of bile in the canaliculi is to some extent detrimental to secretion behind it; whereas, the rapid evacuation of the bile channels, which free diaphragmatic movement insures, is salutary to increased elimination of bile.

Urethral Medicinal Bougies.—VON DÜRING, in *Monatshefte für Praktische Dermatologie*, No. 5, 1888, gives the following formula for medicinal bougies, for the local treatment of urethral affections :

Ol. cacao	..	..	..	6 parts.
Cer. albæ	..	..	..	5 "
Acid. boric. or iodoform	..	..	..	2 "
Zinc. oxydat.	..	..	..	1 part.
Tragacanth.	..	..	..	4 parts.

These bougies may be made of any length or size desired.

A New Method for Supplying the Galvanic Current for Medical Use.—CARPENTER, of Cleveland, describes his method of procuring the galvanic current for office use, as follows :

The device to which we have the pleasure of calling the attention of the profession consists simply in that of using the current of the incandescent lighting system direct from the street-wire passing the door—Thompson-Houston or Edison. We have the wires of the former system placed in our office, and by means of a rheostat resistance sufficient to reduce the current to a minimum is interposed, then by the use of an ordinary switch-board, the current is increased or diminished according as resistance is cut in or out. A milliampère-meter is made use of whereby the current is accurately measured while the patient is in the circuit.

The device is absolutely safe, as the entire voltage of the wire can be handled without the rheostat being used. My wire furnishes a very smooth continuous or galvanic current, with an electromotive force of one hundred and ten volts with a maximum strength of $\frac{1}{10}$ of an ampère, equal to about eighty Leclanché cells. This current is constant, does not vary in voltage, and is always ready, night or day, as the main line from which my connections are made is used for commercial purposes, and furnishes lighting for basements, dark shops, and rooms. This, I am informed, is the case in all large and in many small cities, so that little trouble will be met with in securing a wire with a day current. When a wire is once placed in our office, the task of caring for a battery of cells is at an end, and we have an apparatus that is at an once always ready, reliable, economical, cleanly, and durable. The rapid introduction of the incandescent lighting system, together with the great increase in the use of this form of light, will place within the reach of very many physicians this current for electrolytic work.

The charge for the annual rental of the wire is \$10, not including the cost of putting in, which, if the main line passes the door, should not exceed \$5. This device, as will be seen, does away with cells entirely, as well as the time, trouble, and expense of keeping them in order, and I venture to express, as my opinion, that we have a current superior to any that it is possible to have gener-

ated from chemical action, besides economy of room, which is not a small item in cramped quarters.

A word regarding the danger from contact with the electric-light wire. The Thompson-Houston or the Edison incandescent system of an electromotive force of one hundred and ten volts, and of a strength of $\frac{1}{10}$ of an ampère is harmless, and must not be confounded with the arc system of Brush and others, as the strength of the latter is six ampères, and of course dangerous and must never be used.—*Medical Record*, March 31, 1887.

The Treatment of Flatulent Dyspepsia.—The *Journal de Médecine* of March 11, 1888, gives the following formula :

Bismuth. subnit.,	
Magnesiae pulv.	aa gr. 30.
Belladon. pulv.,	
Zingib. pulv.	aa gr. 3.

Mix carefully and divide into ten powders.

A powder should be taken in peppermint water twice daily.

Hygrine and Cocaine.—Hygrine was obtained by Dr. Ralph Stockman from distillation of so-called amorphous cocaine with water. A drop of it placed on the tongue causes a burning sensation, and it is an extremely irritating substance. Without causing special symptoms, frogs died from the subcutaneous injection of a drop of hygrine mixed with water. Considerable irritation was caused at the seat of injection, while the muscles all over the body, the bowel, and serous membranes were studded with numerous minute hemorrhages, due evidently to the local irritation of the particles of hygrine. Hence the importance of being certain that any specimen of cocaine is free from hygrine. Indeed, this communication is very instructive and important in connection with the occurrence of accidents after the injection of cocaine. The benzoic ethers formed by decomposition of cocaine are also very irritating to the mucous membranes.—*Lancet*, March 17, 1888.

The Treatment of Tuberculosis of the Peritoneum and the Hectic of Tuberculosis.—PRIBRAM, of Prague, regards tuberculosis of the peritoneum, when the disease is general and well marked in other organs, as symptomatic, and not requiring especial treatment. When the disease is purely peritoneal, the treatment first indicated is antipyretic, hygienic, and tonic. Adonis vernalis he regards the best diuretic; he advises inunction over the belly with *sapo viridis*. If the process is not arrested, and absorption does not take place, palliative incision is advised when interstitial ulceration is absent. In women the ovaries and tubes should be examined. A moderate degree of lung affection does not contraindicate incision. In a question of diagnosis between peritonitis and ovarian cyst, laparotomy should be performed. Regarding the pyrexia of tuberculosis, he advises differential diagnosis between tubercular diseases and fevers, the use of antifebrin and antipyrrin, and especial attention to the patient's nutrition.—*Deutsche med. Wochenschrift*, March 8, 1888.

Traumatic Epilepsy cured by Incision.—An interesting case is recorded under the above heading by M. E.

Müller in the *Gas. Médicale de Strasburg*. A butcher ran a large meat-hook into the palm of his right hand between the second and third metacarpal bones at the junction of the lower and middle thirds. There was great pain at the time of the accident, and during the course of the same night the patient had an epileptic fit. He had never previously been epileptic, nor was there any history of the disease in any of his family. At the end of five months the fits recommenced, occurring on every tenth or fifteenth day. Latterly they became worse, and reoccurred as often as twice a week. Palpation of the cicatrix gave the sensation of hardness as if a foreign body were present, but exploration revealed nothing beyond a dense fibrous cicatrix. This was excised, and after two months had elapsed, the patient still continued well.—*Medical Press*, March 21, 1888.

The Treatment of Dentition and Stomatitis.—The *Revue Gén. de Clin. et de Théráp.* of March 15, 1888, gives the following useful formulæ for the treatment of dentition and stomatitis :

For local application during dentition.

Tinct. belladonn.	3 2½.
Cocain.	gr. 8.
Also	
Syrup. aurant. flor.	3 5.
Cocain. hydrochlor.	gr. 3.
Tinct. croci	gtt. 20.

In stomatitis, with ulceration, Comly advises

Mel. rosæ,	
Glycerin.	aa 3 2½.
Potass. chlorat., or sodii borat.	gr. 20.

The affected parts should be touched five or six times daily with cotton dipped in this mixture.

The honey may be replaced by glycerine with advantage, if fermentation continues.

The Treatment of Icterus Neonatorum.—JACOBI writes as follows on this subject, in the *Archives of Pediatrics* for April, 1888 :

A certain degree of yellowish discoloration of the skin is the result of the normal changes of haematin deposited in the skin during the rapid transition from foetal to postnatal circulation. When by retarded separation of the newly born from the mother, and compression of the placenta, the amount of blood in the circulation of the infant is unduly increased, this form of haematoxine jaundice is rather more developed. The simplest form of hepatogene icterus is produced by the sudden diminution of the blood circulating in the vessels of the liver, which encourages the exosmotic transition of bile into the adjoining bloodvessels. All of these forms of jaundice require no treatment. Duodenal catarrh will produce icterus in the newly born as it does in advanced age. Thus the feeding and the digestion of the baby must be carefully watched. The routine administration of syrup of rhubarb is a mistake on the part of the female busybodies which must be discouraged. Maybe some of them can be taught that acid cow's milk and indiscriminate feeding in general, and exposure, tight bandaging, and cold feet, can do still more harm than their medicines. Icterus resulting from congenital obliteration of the large biliary ducts, or congenital cirrhosis,

or acute fatty degeneration, or epidemic haemoglobinuria is incurable. Icterus during septic infection is a bad symptom, and rarely terminates otherwise than in death. Icterus depending on congenital syphilis of the liver is grave, but I have met with several cases which recovered. A thorough and energetic antisyphilitic treatment is in such cases the only safeguard. It may prove unsuccessful, however, because the syphilitic process of the connective tissue is not confined to the liver but extends to the rest of the organs. Mercury must be administered for a long time, a twentieth or twelfth of a grain of calomel three times a day; careful inunction of a scruple of blue ointment daily; or one-thirtieth of a grain of corrosive sublimate in a one-fifth of a per cent. solution of distilled water for subcutaneous injection daily. In the beginning of the treatment two of these medications may be combined, or one of these together with the internal administration of from three to five grains of iodide of potassium. The internal administration of the bichloride of mercury is also well tolerated; one-hundredth of a grain may be given in a teaspoonful of water, or food, every two or four hours, and continued many weeks.

Phlegmasia Dolens and Ædema in Infants.—DR. LEON DUMAS, Professor of Clinical Obstetrics and Gynecology, Montpellier, has recently contributed to the *Annales de Gynécologie et de Obstétrique* a paper on the Probable Identity of the Ædema of Newborn Children and Phlegmasia Alba Dolens. He concludes that this oedema is but one symptom of phlegmasia dolens developed in the course of the first few days after birth. Its causes, though very varied, are essentially of the same nature as in the adult, and may be divided into predisposing and determining. The principal determining cause is the incomplete establishment of respiration, including pathological and other obstacles which that function may encounter before arriving at its perfect state of efficiency. The symptoms of phlegmasia are the same in the newborn infant as in the adult, allowing for certain modifications in relation to the special physiology of the first days of life after birth. There is likewise the same pathological anatomy in both cases; but in the child the venous thrombosis is more often situated in the inferior vena cava. The treatment should be alike in both cases, and the same dangers are to be feared in the infant and in the adult, though the relative lesser vitality of the newborn child must always render the prognosis less favorable in its case than when its mother is similarly attacked. All the precautions by which impediments to the establishment of perfect respiration are overcome, including the avoidance of hasty and immediate ligature of the umbilical cord, together constitute the true prophylaxis against the affection in question.—*British Medical Journal*, March 24, 1888.

Tuberculous Contagion from Man to Dog.—BOURGANGNON, in the *Journal de Médecine* of March 18, 1888, reports the case of a phthisical patient who was constantly attended by a pet dog. The animal often lay upon his master's bed, and shared at times his meals. Shortly after the patient's death the dog succumbed to a disease which possessed all the symptoms of tuberculosis. An autopsy confirmed the diagnosis. The most common avenue of contagion between man and beast is by the

digestive organs of animals; they often swallow particles of sputa.

A Formula for Corrosive Sublimate Gauze.—LÜBBERT and SCHNEIDER in the *Centralblatt für Bakteriologie*, No. 12, 1888, conclude from a series of investigations on different solutions of corrosive sublimate, that the following solution is the best for making gauze, not excepting the recently advised solution of Laplace, containing tartaric acid. The present solution, the writers state, is unirritating:

Hydrarg. bichlor.	3 parts.
Sodi chlorat. crud.	100 "
Aqua destillat.	600 "
Glycerin.	100 "
Spiritus	200 "

Dissolve the sodium salt in water; to the filtrate add the sublimate; to this solution add the glycerine, and then alcohol.

Gauze should be dipped in this, wrung out, and dried. Ordinary materials require one and a half times their weight of fluid to saturate properly.

The materials commonly used to color sublimate solutions are objectionable, as many of them contain fuchsin, which decomposes sublimate.

A Caution against the Common Use of Potassium Chlorate.—The *Medical Press* writes that chlorate of potassium is a very popular remedy; so much so, indeed, that the idea of its being poisonous in certain doses never occurs to anyone. Yet it is evident that if five-grain pellets be thoughtlessly sucked at intervals throughout the day, a very considerable and certainly injurious quantity will ultimately have been absorbed. In children it gives rise to cerebral symptoms, especially "night terrors," with more or less intense prostration. It would be well if the public were cautioned now and again that they cannot with impunity assimilate indefinite quantities of a salt which in anything like large doses is an unequivocal poison.

Menstrual Bleeding from a Laparotomy Scar.—At a recent meeting of the Kiev Obstetrical and Gynaecological Society, PROF. GEORGE E. REIN showed (*Vratch*, No. 7, 1888, p. 136) a menstruating woman from whom he had about three years before removed a cyst of the right ovary weighing thirty-seven pounds, fixing the pedicle in the abdominal wound. The patient soon recovered, and the wound healed, but at one part of the scar there remained a diminutive slough, which fell off just before the beginning of menstruation, its separation being followed by a constant flow of blood from the denuded surface during the whole catamenial period. The phenomenon had regularly recurred monthly ever since. As a rule, the scar begins to bleed somewhat earlier than the uterine flow makes its appearance. The menstrual blood from the cicatrix has a characteristic odor. It is difficult to explain such an occurrence. Possibly, a Fallopian tube or one of the uterine cornua had been stitched together with the pedicle into the abdominal wound. However, Prof. Rein hopes soon to ascertain the nature of this interesting and rare case, since the patient must undergo a second laparotomy for disease of the left ovary.—*British Medical Journal*, March 31, 1888.

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SATURDAY, APRIL 21, 1888.

LIEBERMEISTER ON THE TREATMENT OF PNEUMONIA.

A FEW months ago we presented our readers with a full account of the methods of treatment in pneumonia followed in the chief American hospitals. The subject is one of such practical everyday interest that no apology is necessary in presenting the views of the well-known Tübingen professor, more particularly as his treatment in some points contrasts strongly with American and English practice.

In the *Deutsche medicinische Wochenschrift* he has been discussing the etiology and symptoms of inflammation of the lungs and pulmonary tuberculosis, and in No. 9 he gives his matured experience in the treatment of the former affection. The possibility of the discovery of a specific he thinks less probable in this than in other infectious diseases, and meanwhile he follows the expectant and symptomatic plan which is based upon a clear conception of the course and dangers of the disease. The majority of deaths occur from paralysis of the heart, in consequence of the increased labor, or from heart weakness, the result of the fever. We have here our indication for treatment; for the first, stimulation; for the second, antipyresis. Abstraction of heat by external cold is preferred to drugs, which are used only when hydrotherapy fails.

Liebermeister does not regard the fever as an unmixed evil, but inclines to the view that it is reactive and conservative, an expression of the struggle which is taking place with the microbes of the disease. He

employs the bath in preference to other methods, and orders one whenever the temperature reaches 104° F.. The water may be at 68° F., in which case the patient remains only ten minutes, or the time may be prolonged if the water be lukewarm and gradually cooled. The baths are given preferably after seven o'clock in the evening, as in this way the spontaneous morning remission of fever is increased. During the day, if necessary, cold sponging are employed. Experience has proved to be groundless the fear of chilling and of increasing the inflammation; on the contrary, the patients breathe more deeply, the expectoration is freer, and the entire system is refreshed and stimulated. No recent statistics are offered, but he quotes his Basle records of 150 cases treated in this way, with a mortality of only 10.5 per cent., against an average of 25 per cent. under older methods during a period of thirty years.

Antipyretic drugs, quinine, antipyrin, and anti-febrin, are seldom used, and then only to maintain the action of the bath. Digitalis, which for so many years was looked upon as a substitute for bloodletting, has its uses in reducing fever and supporting the heart. Alcohol is regarded as the most important remedy against the progressive heart weakness. Bloodletting is advised in oedema of the unaffected lung. Cupping is not thought to have any influence in the inflammatory process, but it relieves the pain, a result as well obtained by hypodermic injection of morphine, or by the application of cold.

While, then, on general principles, Liebermeister's treatment of this disease corresponds closely with that employed in our hospitals, his strong advocacy of hydrotherapy, and the striking results which he quotes, should challenge the attention of clinicians. That the method is troublesome and expensive to carry out, should not stand in the way of its adoption in our hospitals, and the recent statements of Brand, together with the experience of the Lyons School, in the treatment of typhoid fever, should arouse an active interest in the method, which heretofore has scarcely received the consideration it deserves at the hands of American physicians.

FLOATING KIDNEY.

STATISTICS are proverbially elastic: the numerical method as applied to the results of therapeutics too often misleading; the personal equation the cause of many false steps in medicine. Yet we would

know little of the natural history of disease without statistics. Such work as that of Louis in enteric fever and that of Flint in pneumonia marks epochs in the progress of scientific medicine, cuts open roadways through the jungle of traditional error.

CARL SCHÜTZE has recently published a brochure on floating kidney, which is of more than passing interest. It is a statistical study from the etiological standpoint. To ten cases personally observed in Zeulzer's Polyclinic in Berlin, he has added ninety of the more fully reported cases collected in the literature, and subjected the whole number to careful analysis.

The fact noted by Ebstein, that floating kidney was found only five times in 3658 necropsies (1: 732) at the Charité in Berlin, affords no insight into the frequency of this anomaly. For, as Landau has pointed out, the movable kidney tends in the cadaver to settle spontaneously into its normal position, and may thus very easily be overlooked. The latter observer himself, in the records from 1870 to 1879, with about 6000 necropsies, was only able to discover the records of four cases.

The most common period of life is from the twenty-fifth to the forty-fifth year; ten cases are, however, noted in the first decade of life, and four in the seventh. The condition may be congenital. In 474 cases, 405, or eighty-five per cent., were females; 69, or fifteen per cent., males. The right kidney is much more frequently displaced than the left; the right, according to Schütze's observations, 65 times; the left, 18; both, 14. The statistics of Landau, Ebstein, and Hare are in close accord with these figures. Schütze's cases go far to support the opinion that laborious occupations and strong bodily effort are of less importance etiologically than is that general relaxation of the tissues which comes of an inactive and sedentary life.

The events of sexual life in the woman, menstruation, abortion, miscarriage, parturition, are of great etiological moment, and to this general category must also be referred dislocations and diseases of the uterus and its appendages. Pregnancy has been frequently accused of causing dislocation of the kidneys, but Fritze made it clear that the gravid uterus not only does not drag the kidneys from their normal position, but tends, on the contrary, to restore them when displaced.

Very important among causative agencies is the relaxation of the abdominal walls which follows frequent childbearing, and the pendulous belly result-

ing from this condition. Yet Schütze found among ten women suffering from wandering kidney only two cases of pendulous belly. Wasting diseases, violent concussions of the body, tight lacing, hydro-nephrosis, and secondary diseases of the kidney itself, are among the causes assigned. Especially frequent as a cause is rapid wasting of the body. The bed of fat in which the kidney lies is almost invariably wanting when this organ leaves its home.

Beumer collected, up to 1878, forty-eight cases of single wandering kidney. To guard against the surgical catastrophe of the extirpation of a wandering kidney whose fellow is functionally inactive or altogether absent, it is necessary, after other diagnostic methods are exhausted, and the case has come to operation, to determine, by internal palpation, the presence or absence of the second organ. H. Braun regards the presence of congenital defects or anomalies of the sexual organs as suggestive of congenital defect or absence of a kidney. In 13 females having a single kidney only, Beumer found 8 to present some developmental defect of the uterus, ovary, or vagina of the side corresponding to the renal deficiency.

Nephrorraphy is to be preferred to the extirpation of a sound kidney. S. W. Gross's early collection of 17 cases, with 9 good results, are cited in favor of the former operation. More recently Braun, Küster, Esmarch, and others have reported similar cases with a preponderance of favorable results.

CEREBRAL SURGERY.

WE learn that Dr. W. W. Keen operated, April 12th, on a second brain case with a very speedy and thus far successful result. The patient is a young man from Kansas City, twenty-five years old, who fell eighteen months ago, and had a depression over two inches long on the right side of the head, over the supra-marginal and post-Rolandic convolutions. He had had paralysis of the left wrist and hand, and four epileptic attacks.

Dr. Keen made an opening $3\frac{1}{4} \times 1\frac{1}{2}$ inches, and removed the depressed bone and the underlying dura, which was diseased and had attached to its under surface a small fragment of bone. The brain tissue was found diseased throughout the length of the scar, and at the posterior end there was a small cyst. All of this diseased brain tissue was removed. The wound was entirely united at the end of three days, and the patient out of bed on the fifth day, no rise of temperature having occurred. The patient is practically recovered.

Two points in the surgical treatment of this case, one of which was indicated by Dr. Keen in our issue of last week, give promise of future usefulness, ergot was given instead of morphia, and cocaine was applied locally to the cerebral vessels with good results in controlling the hemorrhage. The dura having been removed the trephined button of bone could not be replaced on the brain surface, but it was secured to the under surface of the flap by a catgut ligature passed through two apertures made in the bone for that purpose.

Of course the remote result as to the epilepsy and, even possibly, as to the life of the replaced bone disk, must remain for the present undetermined.

TYPHOID FEVER AT THE CINCINNATI HOSPITAL.

AN Appendix to the Report of this institution for 1887 contains the statistics of the cases of typhoid fever admitted during the year, with notes by the attending physicians on treatment. Memoranda of this sort are of great interest, and it would add very much to the value of the annual reports issued from the various hospitals throughout the country if the members of the staff would take the trouble to note in this way the special features of the year's work.

Typhoid fever was epidemic in Cincinnati last year, and 209 cases were admitted to the hospital, of which 34 died, a mortality of 16.2 per cent. In Dr. Forchheimer's wards, baths were systematically employed, when the fever rose above 103°. The water was used at the temperature of the body, and cooled gradually to 70°. As many as ten or twelve baths were given, if necessary, in the twenty-four hours. 51 cases were treated with 5 deaths. In Dr. Carson's wards baths were also used, and of 62 cases 4 died. Dr. J. C. MacKenzie treated 81 cases with 5 deaths. Antifebrin was used with the greatest benefit, acting well in all cases. We cannot quite reconcile these special figures with the general summary, for the cases treated in the wards of Drs. Forchheimer, Carson, and J. C. MacKenzie, added together, number 194, with 14 deaths; while the total number treated for the year is stated to be 209, with 34 deaths.

THE Committee having charge of the arrangements for the International Ophthalmological Congress to be held at Heidelberg from the 9th to the 12th of August next, announce that the following subjects will be discussed: "Glaucoma," to be in-

roduced by Priestley Smith, of Birmingham, and Snellen, of Utrecht. "Cataract," by Gayet, of Lyons, and Schweigger, of Berlin. "Bacteriology," by Leber, of Göttingen, and Sattler, of Prague. On the evening of the 11th of August the members will take supper in the Old Castle, and on the afternoon of Sunday, the 12th, the city of Heidelberg will entertain the Congress at a *féte champêtre* in Ziegelhausen in the valley of the Neckar, with a boat excursion on the Neckar, and an illumination of the Old Castle after sunset.

MM. FOA and BORDONA UFFREDUZZI have communicated to the Italian Medical Association the result of their experiments, by which they have discovered that the microbe in cerebro-spinal meningitis (*meringococcus*) is identical with that which Sternberg obtained by the treatment of saliva, and which Fränkel described as the microbe of pneumonia.

THE Anthropological Society of Vienna, by permission of the government, has appointed a commission composed of Professors Meynert, Kundrat, and Toldt, and Surgeon-Major Weisback, to measure and photograph the skulls of the great musicians Beethoven, Mozart, Gluck, and Schubert, and prepare casts of them for the museum of anatomy of the Vienna University. It is greatly to be regretted that the location of Mozart's grave is not exactly known.

THE Orthopædic Hospital of Philadelphia is the subject of extended and favorable notice in the *Journal de Médecine* of March 25, 1888. The establishment of a similar institution in Paris is urged, and the value of such hospitals is thought to be proven by their successful maintenance at London, Birmingham, Stuttgart, Bologna, and Philadelphia.

THE extraordinary demand for antipyrin has caused an undue pressure upon manufacturers, and in their haste to increase their output they have become careless, especially in regard to the later processes of purification of the drug. According to Dujardin-Beaumetz, benzine has not infrequently been detected in samples submitted for analysis. This impurity may account for some of the toxic symptoms which have been reported, such as gastric disturbance, cutaneous eruptions, and even grave cerebral symptoms, more particularly in the aged.

THE water-supply of growing cities is the subject for which a prize is offered for international competition in 1893. It is one of a series of annual prizes offered by the King of the Belgians, the value of which is 25,000 francs for each award. The essays of those desiring to compete must be addressed to the Minister of Agriculture, Brussels, before January 1, 1893. Here is an opportunity for one of our American water-engineers, so fertile and thorough in these public undertakings, to win a substantial purse and reputation at the same time.

SOCIETY PROCEEDINGS.

THIRD FRENCH CONGRESS OF SURGERY.

Held in Paris from March 12 to 17, 1888.

(Specially reported for THE MEDICAL NEWS.)

The third French Congress of Surgery was presided over by Professor Verneuil, assisted by Baron Larrey, Vice-President; and Professors Gavarret, Brouardel, Maurice Perrin, Ollier, President of last year's Congress, and Pozzi, Secretary, also took places on the platform.

Professor Verneuil opened the session and delivered the presidential address. After having welcomed the foreign professional visitors to the Congress, he developed with amplitude his favorite subject of the good of the conservative method as applied to the cure of surgical affections. He then replied to an attack which was directed against French surgery, by the eminent surgeon of Vienna, Billroth, some months ago.

Professor Verneuil then passed in review the operations which are undertaken daily, when it is well known the patient cannot survive. He then passed in review all the large operations which are undertaken when necessary, by French surgeons. He then said, if we compare, in its general tendencies, surgical therapeutics in France and in foreign countries, one can affirm, without fear of contradiction, that in no country is surgery more conservative than in France.

I shall not mention the questions for discussion in the order in which they were presented, but will give first the three questions which had been proposed long ago as principal subjects to be discussed.

ON THE VALUE OF THE RADICAL CURE FOR HERNIAS, WITH REGARD TO THEIR FINAL CURE.

DR. SOCIN of Bâle, Switzerland, said that according to the discussions which have lately taken place at the Société de Chirurgie, it appears that the radical cure for hernias has become a common practice among French surgeons. In regard to his own operations, he had operated 75 times for the radical cure of non-strangulated hernias and 85 times for strangulated ones. The first series had given him two deaths and the second eleven. He had seen after operation, about 133 of his 147 patients, some a few months later, others one year, and others at the end of nine years, which proves that cure is possible, while if the others have not been entirely cured, they have, at least, derived some benefit from the operation. This operation ought to be performed in every strangulated

hernia, except in cases where the intestine ought not to be reduced.

The resection of the sac, instead of being a danger, offers a new chance of success; there is no doubt that the extirpation of the tissues which have been in contact with the intestines renders the wound much more simple. He also attributed a great part of his success to the use of antiseptic measures strictly carried out. He disinfects the intestine before returning it to the abdominal cavity.

The indications for the cure of non-strangulated hernias, he thinks, are in young subjects of either sex below twenty, in whom the classical treatment by bandage does not succeed in retaining the hernia reduced in a complete and absolutely permanent manner; in adults, when the bandage does not retain the hernia completely in an easy and non-painful position.

The chances of success are much greater when the subject is young and the hernia small and recent. This is easy to understand; in young subjects hernias are always congenital, that is to say, they are due to the persistence of the vagino-peritoneal canal, and this abnormal disposition constitutes the whole disease. Take away this canal, and the subject then finds himself well formed and the cure is really radical. This explains the success he had obtained in subjects below twenty-five, about 62 per cent. of complete recovery.

In elderly subjects the sac is not our only trouble, we must consider the lengthening of the mesentery, the adipose excess of the epiploon, the weakness of the walls and rings, all conditions which cannot be remedied by the extirpation of the sac alone. In this condition his successes above twenty-five years have been only 42 per cent.

The existence of a double hernia in a patient, or in the direct family, diminishes the chances of success. Hard physical work does not conduce to the return of the trouble. The application of a bandage after the operation is useless, often harmful. The operation is without danger in simple cases, the danger only appearing in very old subjects and when the hernial tumor is very large, so large that the skin is ulcerated.

The operation consists in the total extirpation of the hernial sac above its neck. Suture of the pillars of the ring is only exceptionally necessary. In longitudinal hernias sections might present difficulties, but succeed in the majority of cases. In case of testicular ectopia with atrophy, the testicle must be removed with the sac.

DR. THIRIAR, of Brussels, said that during the last two years he had operated upon 26 cases of hernia; 12 times for a strangulation, 14 times to take away the infirmity. Of his 12 kelotomies for strangulated hernia he has tried the radical cure in 7 cases. He had the statistics of 21 operations with one death, the patient, aged sixty-four years, died on the sixteenth day from alcoholic encephalitis. The peritoneal cavity was normal.

He has only seen four of those who were operated upon more than three months ago. The first man, sixty-three years of age, had two large irreducible inguinal hernias, he was operated on on both sides at the same time. On the right he had healing by first intention, on the left, suppuration occurred. The hernia has returned on the right side, on the left it is cured.

The second man, sixty-five years of age, had a large

right inguinal adherent hernia. Operation very long; has to-day a point of hernia easily reduced.

The third man, forty years of age, a voluminous inguinal, irreducible, and painful hernia. The sac contained the convolutions of the large intestine and the small intestine. The dissection was very difficult, the spermatic artery being cut. The patient actually wears no truss, appears entirely cured, but the testicle is atrophied.

The fourth, thirty-three years old, was operated on twice, the first time for a right enterocoele and then for left adherent epiplocele. He is doing very well; cured.

He operates following the method of Lucas-Championnière. He always sutures the rings. He drains through the scrotum, and never has a bandage worn. He only operates when a hernia is irreducible or incoercible, when it is painful, when it is congenital and accompanied by testicular ectopia, or when it is maintained with difficulty by a truss and there is danger of strangulation. In these conditions he estimates the radical cure for hernias an excellent operation.

DR. LEONTÉ, of Bucharest, employs the following method: after incision of the sac and reduction of the intestine the internal surfaces of the sac as well as of its neck are exposed. He then incises in a circular manner the serous membrane on a level with the neck; immediately the two serous borders, the result of the incision, separate themselves, leaving exposed the subjacent cellular tissue. The serous layer of the superior border has even a tendency to recoil itself inwardly; he aids this inward recoiling by detaching and pushing this serous layer either with his nail or with his tissue-forceps. In this manner he obliterates the superior orifice of the hernial tract. To complete this obliteration he passes the catgut round all the surface which has been denuded of the serous layer, and drawing the two ends together the opening is closed like a purse. He does not extirpate the subjacent sac, but he scrapes its external surface, and adjusts with silver wire or silk the walls of the sac and those of the skin in the same suture.

After the cure he forbids the use of a truss. By this method he has had 7 successes out of 7 cases. He always obtained an immediate healing. As to a return of the trouble, he has not seen a sign in one case as yet. One of his patients was operated upon two and a half years ago. The conclusions are these: 1. The operation is shorter and less painful. 2. No danger of wounding the organs of the cord. 3. One reinforces the superior ring by uniting the walls of the sac, which by their adhesions give a true pillar sustaining the cicatrix.

DR. MOLLIÈRE, of Lyons, said that kelotomy is an operation without gravity by itself, if one has thought the contrary it is because he has confused the dangers of kelotomy with those of strangulated hernia. He operates as follows: 1. Isolates, without opening it, the hernial tumor. This dissection is easy, whatever the hernia might be, it is a little longer with inguinal hernias. In an umbilical hernia the navel must be cut away; without this precaution one could not isolate the sac. 2. The sac being isolated it is to be opened in its prominent part and the contained viscera examined. 3. To liberate the hernia an incision is made in the constriction outside the sac, and the neck dilated when the hernia is strangulated, with a blunt instrument, and the intestine reduced. 4. Finally, the sac is ligated with an elastic thread very

tightly applied. In making this ligature one draws very strongly on the sac, so that the ligature catches the peritoneal cul-de-sac above it. He has verified, long after the operation, by autopsy, the radical cure of the hernia.

DR. ROUTIER, of Paris, had performed fourteen operations for the radical cure, and he advises the total extirpation of the sac, with a ligature applied at the base; the suture of the pillars appears to him useless. Out of the fourteen cases he has had fourteen cures; six patients only had been seen who had been operated on at least fifteen months before. All were cured; one only has a return, the sac, for certain particular reasons, had not been extirpated, but only scraped. Two cases were umbilical or para-umbilical hernias, and remained cured without the use of a bandage. The other twelve are inguino-scrotal hernias, some irreducible from adhesions, others incoercible.

He advises the use of a light truss, which acts as a preventive against the reproduction of a hernia, to which patients are always predisposed, on account of the nature of their abdominal walls. According to his practice, the operation is a successful one, and he recommends it, first, for any strangulated hernia in which the intestine can be returned; second, for any hernia that cannot be constantly, completely, and easily kept reduced.

PROF. TRÉLAT, of Paris, said there would soon be an understanding on the question of radical cure for hernias, which term he condemns, as it leads surgeons to believe in an absolute cure, while only a simplified condition of the trouble is obtained; he prefers the words, operative or surgical cure.

As regards the indications for an intervention, he thinks that the easily reducible and maintained hernias ought not to be operated upon, for in forty per cent. of these cases the patient is obliged to wear a bandage after the operation. We must interfere only in those in which irreducibility in any form is present, however small the irreducible portion may be, should it only be a band which at the moment of the reduction carried with it the sac or the testicle; the operation is also indicated for the impossible or too difficultly maintainable hernias.

It is the simplification of complicated and adherent hernias which is the real conquest accomplished for the surgical cure of hernias; it saves individuals condemned to a certain death at a more or less distant time. He is convinced that intervention limited to this series of hernias would suffice to prolong notably the average life-time of hernial patients.

In lucky cases one can obtain the total cure; it has been realized in sixty per cent. of the cases. But this probability plays a much less important part than the successful operative intervention: for a lecture, he had collected, in one evening, about 160 cases, without one death, nearly all done by foreign surgeons. There had been stated lately at the Société de Chirurgie, several very fortunate series, giving about 130 cases. Adding to those 17 operations made in his own wards, we get the respectable number of 307 cases without one death. This is not a statistical study; he had only picked like flowers the facts which offered themselves to him, and which really are surgical flowers. Uniting all these known facts, we arrive at a mortality of 0.04 per cent. Although death is possible in certain grave cases, yet he knows of no more successful surgical operation. This is the reason why the radical cure has been so rapidly admitted by the surgeons.

of every country; it is an operation without gravity, without mortality; it does away with danger, and reduces to its minimum a disagreeable infirmity. He had himself resisted a long time, but he had finally been converted, and had abandoned the practice of progressive and laborious reductions of adherent hernias, which he to-day considered a bad practice.

This operation unites most of the conditions requested by Prof. Verneuil; if it is not always simple, it is successful if aseptic, and it will be efficacious every time one conforms to the rules laid down by M. Lucas Championnière; it replaces an infirmity by a hardly visible cicatrix.

DR. J. BŒCKEL, of Strasbourg, had made twelve operations for the radical cure, which he had been able to see again. Five were non-strangulated hernias, three voluminous and incoercible, and two partially irreducible, and seven strangulated hernias. His results have not been very encouraging; he lost two patients: one, on the fifth day, from acute septicæmia from gangrene of the scrotum; the other, from delirium tremens after the cure of the wound. Out of the ten surviving ones, two have had a return of their hernias—which, it is true, at the end of seven years, remained reducible and well maintained. An old man, having had a laparo-herniotomy performed, without a radical cure, had seen a point of hernia appear at the end of three years; another patient, operated on in the same condition three years ago, presented no return of the trouble; three have been without return after ten, twelve, and eighteen months; the last three have been seen without return in the last six or seven years. All wear trusses. After having tried, in numerous cases, all the other operative procedures recommended, he had finally adopted the one of M. Lucas Championnière.

DR. J. LUCAS CHAMPIONNIÈRE, of Paris, made a great distinction between the operations for non-strangulated and strangulated hernias; the operations for strangulated hernias are done too rapidly, hence ought to be systematically excluded from the present discussion. He has made eighty-one operations for radical cure. The first two operations were done seven years ago, and the two patients need a truss: but one had not been operated upon according to the rules he follows now, and the other had an enormous hernia. One can judge at the end of the sixth week whether an operation will or will not be curative. As regards mortality, he had lost only the last patient on whom he operated, but this does not change his opinion in regard to the successful character of the operation—it was a voluminous tumor in an emphysematous patient, he operated away from his service, had not his usual assistants, so that the operation lasted two and a half hours. The patient was well for two days, but in the evening he was attacked by a pulmonary congestion, of which he died. If he had been closely watched, as he would have been in his wards, perhaps a great number of cups applied would have saved him. This case is not comparable to the others, and he might just as well have lost a woman upon whom he had operated for an umbilical hernia of thirty inches circumference. If there remains a large orifice, the bandage is quite necessary. In the other cases, it only serves to atrophy the cicatrix, and he only applies a truss above the hernial canal, which protects against any intestinal pressure.

He did not see why we should not also operate for rad-

ical cure, in those cases which are outside the rules laid down for intervention, as this cure can be obtained in favorable cases. He had himself operated upon several children, and he is certain he will have excellent results; the congenital hernia, in particular, is an absolute indication on account of the integrity of the rest of the abdominal walls, which can be fortified by special gymnastics.

Above all others, one must operate upon hernias which grow rapidly, for radical cure has three enemies: pulmonary congestion—very dangerous in old subjects and in large hernias; the large intestine, which renders the operation difficult and the return of the trouble certain; finally, the organic breaking down of old hernial patients who are troubled with albuminuria or glycosuria. He always operates upon small hernias before their volume renders these operations more dangerous and less efficacious.

DR. SEGOND, of Paris, asked, Is the operation for hernia a radical cure, or not? He had made fourteen kelotomies for non-strangulated hernias, and thirty times for strangulated hernias. His forty-four cases led him to the following conclusion: As regards the successful character of the operation and the operative risks, he considers only his first fourteen operations. He had no deaths. When he analyzed his thirty kelotomies for strangulated hernias, he finds that five of his patients died: one, an old man, from pulmonary congestion; another from tetanus, and three as a result of the strangulation. This shows that the operation for radical cure does not increase the gravity of the intervention.

As regards the immediate results, all the patients are satisfied, and the relief they experience encourages them to ask a second operation when this becomes necessary. As to the definite value of the surgical cure, he had seen about one-half of his patients again. Two were definitely cured, while the others lost all the benefit which had been derived from the operation.

His indications are the same as those laid down by Prof. Trélat. He tries to apply a ligature as high up the sac as he can. The dissection is not always easy, where one wants to save the spermatic cord. He has been obliged on two occasions to give up a too timorous dissection.

The trusses he uses after the operation are very light and easy, and have nothing in common with those instruments of torture that are applied before the operation.

M. SCHWARTZ, of Paris, had had occasion to treat one non-strangulated hernia: a man of thirty-six years, with signs of tuberculosis, having an inguinal hernia the size of a child's head, irreducible, and very painful. After he had incised the sac, he felt upon the large intestine the sigmoid flexure with its surrounding parts, which had acquired the volume of a fist, while the thickness of the intestinal walls measured more than one-third of an inch. There were no adhesions, and this increase in volume was the only cause of irreducibility, so much so that he had to incise about $1\frac{1}{2}$ inches of the hernial ring, which already admitted four fingers. As he was unable to place a ligature upon the sac, he applied sutures on the pillars. Although the patient wore a bandage, the cure only persisted three months; at the end of seven months the hernia had already a large volume. The patient died of tuberculosis, at the end of nine months.

DR. L. G. RICHELOT, of Paris, admitted the conclusions of M. Championnière, and he divides hernias into three

classes: 1, simple hernias; 2, complicated hernias; 3, hernias of old age and cachectics. The simple hernias of young people ought not to return after the operation; there is a complete anatomical restitution.

Complicated hernias are usually old, with large rings, voluminous, irreducible, adherent. Radical cure is less certain, still we get definite cure. In complicated hernias, when the cure does not maintain itself, we always have a suppression of the accident. In complicated hernias, complete cure is often obtained; if it does not take place, the return of the trouble is only an insignificant, easily tolerated pointing.

In hernias of old people and cachectics, diabetes, albuminuria, etc., are contraindications to the operation; also in emphysematous old people with large tumors. He has, however, on two occasions, operated on a man of seventy years of age, who lived in his bed, without moving, with two enormous hernias. The first time he returned into the abdomen a mass of the small and large intestine; union took place immediately. Encouraged by this result, he operated two months later on the opposite side, without any local accident or trace of peritonitis, but a pulmonary congestion appeared on the third day, and killed the patient.

DR. LE BEC, of Paris, has operated on a man sixty-five years old, having a fistula situated in the middle of the scrotum. He wears a bandage. The testicle appeared normal, but the cord was covered by a fistulous tract, which formed a mass of the volume of the little finger, resembling a tubercular, suppurating mass and part of the vas deferens. He decided to attempt the radical cure. After incising the skin, he found an elongated mass, of the volume of the little finger, appearing to be the spermatic cord thickened by inflammation. The spermatic vessels were dissected; he found the vas deferens enclosed in a mass of inflammatory tissue, but unluckily it broke, which decided him to take away the testicle. The patient being old, there was no great objection. In dissecting the inflammatory mass, he found that it was continuous with the sac, and extended to the external inguinal ring, and from there penetrated into the abdomen. It was the ileo-caecal appendix, which was adherent to the sac. The rounded extremity being inflamed, and keeping up the fistula, he opened the sac on its lateral parts. The adherent and suppurating extremity was carefully detached and ligatured, the whole being returned into the abdomen. The patient was cured, and only had a small abscess under the cicatrix, owing to faulty drainage. He saw the patient five months later; he was wearing a truss, and felt perfectly well.

CHRONIC SUPPURATIONS OF THE PLEURA AND THEIR TREATMENT.

PROF. LE FORT, of Paris, thinks the Letievant-Estlander operation a very good one. If there exists a large suppurating cavity, the operation is not successful, even if a great number of ribs are resected. He remarked that when the operation of empyema was first resorted to, the persistent fistule was much rarer than it is in our day. At first, when the pleura was opened, it was washed out, and the opening kept patent with a piece of cotton. Since then, this cotton has been replaced by drainage tubes which help the evacuation of the suppuration of the pleura, but which, remaining open, allows the air to enter freely the thorax. Under such conditions,

the aspiration of the thoracic walls can have no more action on the lung, which remains retracted, and its expansion, which is one of the conditions most favorable to obliteration of the diseased cavity, is rendered much more difficult. He thinks we would have more frequent cures of empyema if we could so arrange that after having placed drainage tubes we could prevent the air from going through them in the intervals between the syringing out.

One of his patients presented a singular phenomenon. He had a fistula admitting about 4 ounces of liquid easily. One day, after convalescence had set in, when no more syringing out was done, he injected 3 ounces of liquid. Immediately the patient had a syncope, and he feared very much for his life. Following this accident he had a paralysis of the extremities which passed very slowly away. He thought he must have had a medullary apoplexy the primary cause of which was unknown.

DR. J. THIRIAR, of Brussels, in the past four years had operated on thirteen patients suffering from purulent pleurisy with fistulæ. They had necessitated nineteen operations for thoracoplasty. Twice the costal resection had been the first step of pneumotomy, and once it was made according to the modifications brought about by Schede and Sprengel—that is, the old thoracic wall, except the skin, had been resected. Only one patient died from the effects of cold; eleven were cured, and one female patient had only a small fistula.

Of the ten cases, seven were operated upon once; a child of twelve years had been operated upon twice; a man of twenty, three times; a woman of twenty-nine years, also three times.

A man of twenty, had a left purulent pleurisy with fistula. On September 7, 1885, he resected from the fourth, fifth, sixth, seventh, and eighth ribs, about $1\frac{1}{2}$ to 3 inches of each. At the second dressing he was told the drainage tube had fallen out, and a drainage tube was presented to him as being the one. He left the hospital on October 11th apparently cured. Two weeks later a new abscess opened; the patient entered his ward in January, 1886, and he took away about 4 to 5 inches of the fifth, sixth, seventh, and eighth ribs. The patient left the hospital on May 26th, with a fistula. The patient was subjected to a third operation on October 26, 1887. To the five already resected ribs, he resected 1 inch of the second rib, 3 inches of the third rib, and $2\frac{1}{4}$ inches of the ninth rib; the pleura was at the same time thoroughly curetted. In June, suppuration being still very profuse, he undertook the resection of the pleura and thoracic wall. After having dissected the skin, he took away with the ordinary costotome, a fragment of the thoracic cavity, starting at the tenth rib and extending to the clavicle. He then discovered a very large drainage tube, calibre No. 10, and 16 inches long. He took it away, and after a careful curetting of the pleura, especially below the clavicle, he sutured the cutaneous flaps. On August 30th, the man left the hospital, absolutely cured. He has seen him since; he is perfectly well.

After having tried different methods, he makes his costal resections with one single transverse incision; he can easily resect seven or eight ribs, and he obtains ordinarily union by first intention. The extent, length, and number of ribs to be resected are subordinate to the extent of the affection. He places his resections as far from the lung as he can—that is, in the anterior part of

the thorax. He does this to such an extent, that when he has cut the rib at its posterior part, he seizes it with a forceps and tears it from its anterior cartilaginous insertions. He tries to avoid injections in the pleural cavity, which he has thoroughly disinfected at the time of the operation, and he helps the restoration of the thoracic wall by the application of an elastic band.

DR. J. BŒCKEL, of Strasburg, has made twelve Estlander's operations; he has had nine cures and three deaths. The three deaths were, the first, tuberculous; the second, cardiac; and the third, suffering from albuminuria. The other nine operations give us, six complete cures, one temporary cure, two incomplete ones. Of the two incomplete cures, that is with fistula, one was in a child who died later on from phthisis; the other in an adult of thirty-five years, on whom he made a second operation.

Want of success is due to the fact of a too timid resection; this was his weakness in his first operations. If it is necessary to obtain a falling down of the chest to resect the rib above and behind, one is justified in resecting the scapula. In certain cases incision and excision of the pleura become necessary.

DR. VIEUSSE, of Toulouse, has made three operations; one died in forty-eight hours after the operation of septicaemia; the two others were cured. In one of the cases the fistula was at the angle of the rib.

DR. DELORME, of Paris, finds that amongst the causes of non-success is the too great limitation of the costal resection, which renders it impossible mechanically for the suppurating cavity to close. The thoracic cavity, to take the position of the *chord* of the excised costal arc, only needs to be depressed $1\frac{1}{4}$ inches, which demonstrates that a cavity more than $1\frac{1}{4}$ inches deep cannot be closed by the sole retraction of the thoracic walls deprived of its skeleton. It would be quite different if to the bony excisions one would add the resection of the soft tissues vertically, as high up as the cavity, and that afterward the flaps should be pushed in contact with the opposite parietes of the cavity. If the cavity should extend beyond the limit of the excision, one could obliterate the lateral cul-de-sac with the folding in of the parietes, fixing it there with catgut.

The inconvenience of this traumatism, which cannot be very extensive, cannot be compared to the danger of persistent suppuration of the pleural cavities. The obstacle to the cure can come from the tuberculous nature of the pleural lesion. In those cases one must curette the cavity. But this curetting must not be the irregular, insufficient, uncertain, dangerous curetting, which consists in thrusting the curette through the fistula, and moving it in different directions. It must be done openly, so as to destroy the secondary diverticula which may exist.

DR. BOUILLY, of Paris, had operated thirteen times; twelve times on patients from twelve to thirty years old; the other case was a man over forty. Youth gives the greatest chance of success on account of the elasticity of the thoracic walls. The oldest suppurating cavity had been twelve years; the most recent one, one year old. He divides his cases into four groups: 1st, large suppurative cavities, the lung being thoroughly compressed and irretrievably lost; 2d, large cavities, but the lung still good; 3d, medium cavities, in which the lung is compressed in a cup-like shape of four inches broad; 4th, fistulous tracts, more or less deep and oblique.

The pleura is sometimes an inch thick, and requires excision. In other cases the pleura may be soft and friable, which indicates a breaking down of the patient. In very large cavities, he thinks better not to interfere. The large cavities may be attempted if the subjects are less than twenty-two years old, and if the cavity does not extend too high or too far back. The fistulous tracts should be well scraped and touched with chloride of zinc. Out of thirteen operations he reports eight definite cures: one persistent fistula; one result incomplete, and three deaths; one by septicaemia on the third day; one during the operation; the last one from hectic after six months.

DR. BERGER, of Paris, had had two deaths and thinks the operation a serious one. One patient was tuberculous who had an operation for empyema performed four years previously, having had a fistula since, through which he would bleed very much, a regular hemoptysis. It was very difficult to explore the chest. He then made a resection, a very laborious one, but when the patient became conscious he suffered from severe dyspnoea, and died four hours later. The cause of the death was due to his having resected the last rib. These last ribs give attachment to the digitations of the diaphragm, and sustain the phrenic centre, and their suppression produces a loss of equilibrium in the respiratory play, which is still more favored by the bad condition of the lung. If there be a tendency or signs of tuberculosis or of amyloid degeneration of the viscera, one must not operate; but if the suppurating cavity is the only cause of hectic the suppression of the suppuration will restore the patient.

DR. KIRMISSON, of Paris, had only one case, which, however, he followed for four years. In 1884, a man, nineteen years of age, suffering from chronic left purulent pleurisy with a fistula below the nipple, consulted him. After having opened the eighth interspace he excised two or three inches from four ribs. The general condition of the patient became better, he went home, but returned later to have a second operation performed, this time eight ribs were excised. The patient was cured with a very small fistula.

DR. FAUVAL, of Havre, presented a patient on whom he excised respectively, 4, 5, 5, and 3 inches of the fifth, sixth, seventh, and eighth ribs; the cure was complete.

DR. OLLIER, of Lyons, said that in children he recommends very small excisions, whatever may be the size of the pleural abscess, relying upon the elasticity of the thoracic walls, for large excisions would produce deformities of the vertebral column. In adults, large excisions are necessary. The excisions must be done on the lateral parts of the thorax, the nearer you go toward the anterior portion of the rib the more you compromise its further osseous development, for it is always by its anterior part that the development proceeds. If the fistula be nearer the sternum, resect only on the side, the immediate results will be sufficient, the later results will be much better. He made these observations on lambs when he made his experiments on the sub-periosteal reproduction of bone. One must be very careful in young subjects to take away carefully the costal periosteum, or else we would have a rapid osseous regeneration which would interfere with the success of the operation; the scraping of the periosteum is not sufficient. This precaution is not necessary in elderly persons.

DR. LEVRAT, of Lyons, mentioned the history of a

case on which he performed costal excision three times. In his two last attempts he met with real bony plates very extensive, the ablation of which was very annoying. The destruction of the periosteum by dissection or with the thermo-cautery would prevent such formation.

DR. OLLIER said that these bony plates are found especially in old inflammations of the pleura, they are ossifications due to the presence of the periosteum on neighboring inflammatory tissues. In one case he had great difficulty, the pleura was lined with a calcareous layer, which prolonged itself in inaccessible culs-de-sac. He took a great part of it away, but was compelled to leave the rest, which kept up a small fistula not dangerous to health.

DR. DURET, of Lille, communicated a case of excision in a child four years old. The suppuration, which was very extensive, had lasted eighteen months and had reduced the little patient. He excised from four to five inches of five ribs. The cure was complete, and the lung returned to its function. He concludes that in children this operation will sometimes give excellent results.

ON THE RETURN OF EXTRIPATED NEOPLASMS.

DR. CAZIN, of Berck-sur-Mer, gave the results of his practice from September, 1862, to 1886; he had extirpated 564 malignant tumors. The diagnosis of the tumors he had treated had not always been made before intervention, but the post-operative examinations have always settled the question. These tumors were myxomas, chondromas, sarcomas, epitheliomas, carcinomas. He would only take, for example, the scirrhus and encephaloid.

He had operated upon 102 *scirrhus* of the breast; 60 complicated by ganglionic extension, 42 without it. In the first 60 cases he obtained 7 definite cures, 48 returned, 3 died, and 2 results unknown. With the 42 others he had 8 absolutely cured, 28 returned, 2 died, and 5 results unknown.

He operated on 120 *encephaloids*; 80 with ganglionic involvement and 40 without. In the first 80 he had had 5 cures, 67 returns, 4 deaths, 4 results unknown. In the 40 others 8 definite cures, 26 returned, 1 death, 5 unknown.

The returns he had observed have commenced from three months to seven years after the operation. He attributes the proportion of his successes to his adhering strictly to these precepts; very extensive extirpation, without occupying himself with the immediate union of the wound, even when the lymphatic glands appear normal; he extirpates the lymphatic vessels between the tumor and the lymphatic glands.

PROF. VERNEUIL, of Paris, said that in the great majority of cases cancer is a constitutional disease; the beginning may be a local trouble, which once developed will infect for ever the system, and never is cured. There can only be occasional arrests in the development of the tumor. He had seen in a lady, a cancer return on a cicatrix of the breast thirty years after the primary operation, with histological characters exactly similar to the first tumor. In another case he saw a ganglionic return six years and a half after the extirpation of an epithelioma of the neck of the uterus. To explain this first fact, we might say that there is a new determination of the diaesthesia on the cicatrix, which is a place of less resistance;

he preferred the idea of morbid latency, which explains also the glandular return of the trouble. It is certain, that where the return took place there must have been already some morbid elements there at the time of the operation. As to the microbial character of the cancer, it is not yet established. What do we do to prevent the return? We make our patients follow a treatment for six months. He thought, however, that these germs, in an embryonic state, so to say, can be destroyed or influenced by the medicines which are powerless on the declared cancer. He always prescribes after an operation a permanent arsenical and alkaline treatment. He orders $\frac{1}{8}$ grain of arsenic a day, and a teaspoonful of magnesia every night before going to bed. Under the influence of this treatment he had seen a lymphatic gland remain stationary for more than one year after he had amputated the breast; he absolutely condemned the iodide of potassium. One must also prescribe a vegetable diet; for he thought that since our peasants have taken more meat during their meals the number of cancers has also augmented.

DR. PONCET, of Lyons, read the statistics of his operations: Out of seven primary epitheliomas of the scalp, all died after one or more operations; on the contrary, two epitheliomas, which had begun in an old sebaceous cyst, extirpated, gave him two good results. The skin epitheliomas on cicatrices of burns returned very rapidly. Eight epitheliomas of the tongue all died from a return of the trouble within two years; on the contrary, he had two lasting cures for epitheliomas of the floor of the mouth; in one case, the cure is due to a very extensive ablation, favored by the ligature of both external carotids and the excision of the inferior maxillary. He concludes, 1st, that a return of a neoplasm is almost certain in subjects presenting a direct cancerous heredity; 2d, when the glands are involved, the tendency to the return of the disease is much greater; 3d, the best prophylaxis is found in the rapid and broad extirpation; 4th, one must also not operate when we find very unfavorable conditions; great numbers only demand a palliative intervention.

DR. J. BŒCKEL, of Strasbourg, said that out of 103 operations for cancer, he had had 89 cures, and 14 deaths. Out of the 89 cures, 12 only can be considered as permanent; 32 have been lost sight of after two to four years; the 45 others had a return. Among these returns, one came six years later (rectum), and three from eleven and a half to twelve years (lips, rectum, and tongue).

DR. POLLOSON, of Lyons, said that out of 7 cases of diffused myxomas of the extremities, which were apparently completely extirpated, all have returned within the year, and have required the amputation of the limb. In presence of these myxomas one must not hesitate to sacrifice the limb as early as possible.

DR. LABBÉ, of Paris, said that it is sometimes a difficult matter to obtain from the patient the authorization to sacrifice a limb for an apparently local trouble; this had happened to him lately, a patient suffering from a diffuse myxoma of the arm, refused to let him disarticulate his shoulder; he returned a few days ago, but too late to be operated upon. But there are some benign tumors, which are very interesting to consider, the adenoid tumors of the head, which have a tendency to return. The classical operation for these tumors is simple enucleation; it is absolutely insufficient, and it is necessary to

extend beyond the capsule of the tumor. In addition, when these tumors are very large, the whole breast must be extirpated, and search for the rest of the gland must be made which has been pushed eccentrically and flattened, and which is difficult of recognition. We shall in that manner prevent the six or seven successive returns of this variety, of which we have examples. He is a firm believer in immediate autoplasties, especially of the face, when we extirpate large tumors. For limited epitheliomas of the face he had always been satisfied with the use of the caustic, which gives results superior to the use of the knife. He also believes, like Verneuil, that a post-operative treatment is necessary. He would add to the medicines employed and mentioned by Prof. Verneuil, the tincture of condurango, which has also been used by Nussbaum.

DR. G. RICHELOT, of Paris, remarked that total hysterectomies gave as many or more returns than partial hysterectomies. This is due to the fact that complete hysterectomy is only undertaken when the cancer is very extensive, and extends beyond the uterine limits. He presented 13 new cases of vaginal hysterectomy, 2 must be deducted, for extension to the broad ligament was recognized, and the operation was not completed. Out of the 11 others he has had 5 returns, and 6 cures, 55 per cent. But 11 cases are very few to establish a mortality, and 2 of his cases are only seven or eight months old. It is in the first six months that the return of the neoplasm is to be feared; it is rare to observe it after two years. All his patients were operated upon early; four times he had an intra-cervical cancer, and twice a little more extensive growth on the neck of the uterus. To diminish the chances of return, he resected a band of the vagina. This is especially useful in the cauliflower epithelioma of the neck of the uterus, which has a greater tendency to propagate itself to the vagina. The cases must also be well watched for six months, and the least return of the trouble must be destroyed. He has employed the secondary interference in two cases, and the cure maintains itself. There should be no operative interference when the broad ligaments are involved.

DR. CASTEX, of Paris, presented a case with autopsy, in which there was, on the patellar cartilage, the propagation of a sarcoma by the bloodvessels; there existed in the middle of this cartilage, which was normal, a sarcomatous colony in relation with the degenerated synovial membrane through vessels of new formation. The histological examination has shown the migration of these sarcomatous elements through vessels of new formation.

DR. SABATIER, of Lyons, recommends to attack malignant tumors by their periphery, and not to tear them, so that none of this pathological tissue may become grafted on the fresh bleeding surfaces. The union by first intention is a danger, for such little pieces, which may be left behind, will be the source of a new development, hence union by second intention is to be recommended.

DR. MOLLIÈRE said if the patient is young the return of the trouble is almost certain, and it becomes a question whether to operate or not. After fifty years one can hope that no return of the trouble will take place. After seventy years one is almost sure it will not reproduce itself.

DR. GALEZOWSKI, of Paris, said that the malignant tumor of the eye develops generally in the anterior seg-

ment of the eye, which he explained by the great nutritive activity at the sclero-corneal junction. In melanocarcinomatous tumors the epitheliomas do not appear to reproduce themselves through the bloodvessels or lymphatic vessels, for they remain localized where they first broke out. The malignant tumors of the eye he finds now much more common than twenty years ago. The mechanism of direct inoculation explains the propagation of the neoplasm, the epitheliomas, which, beginning in the globe of the eye, inoculate the palpebral border. In other cases, the propagation takes place by the lymphatics. In melanocarcinomatous tumors the implantation takes place in the corneal border.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, March 26, 1888.

THE PRESIDENT, S. WEIR MITCHELL, M.D.,
IN THE CHAIR.

DR. S. WEIR MITCHELL read a paper on
LOCOMOTOR ATAXIA CONFINED TO THE ARMS:
REVERSAL OF ORDINARY PROGRESS.
(See page 428.)

DRS. CHARLES K. MILLS and W. C. CAHALL reported
SIX CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.
(See page 429.)

DR. WILLIAM OSLER said that it was interesting to note that in this city cerebro-spinal meningitis had been endemic for so many years. Dr. Stillé states that every year since 1863-64, deaths from this affection have been reported. Many of the cases were probably not cerebro-spinal meningitis. Mistakes in diagnosis were very common in this affection. Three or four instances of this had come under his observation. One case of smallpox was diagnosed as cerebro-spinal meningitis. Cases of what the French term the cerebro-spinal type of typhoid fever, were frequently diagnosed as cerebro-spinal meningitis, and at the post-mortem the brain was deeply congested, while the intestines exhibited the characteristic enteric lesions. The fifth case reported by Drs. Mills and Cahall resembled typhoid fever with severe cerebro-spinal manifestations. In certain of these cases he did not think that it was possible to make a positive diagnosis, unless the base of the brain was involved.

DR. MILLS said that the fact that in the fifth case the patient became blind was a strong point in favor of cerebro-spinal meningitis.

DR. H. A. HARE spoke with reference to the use of salicylic acid and quinine in cerebro-spinal meningitis. He had always understood from his reading and teaching and had found it practically correct, that these drugs are contraindicated in inflammation of the meninges of the brain and of the brain itself on the ground that they produced congestion of these parts. Studies have shown that in animals killed with quinine intense inflammation of the meninges of the brain was the typical post-mortem lesion.

DR. WILLIAM W. WELCH had been much pleased in listening to what had been said. It was, he said, shortly after the war that he first saw in this city cases of cerebro-spinal meningitis, and they answered to the description

given that evening. Since then he had only occasionally met with a case. He was inclined to agree with Dr. Osler that not unfrequently a mistake in diagnosis was made in regard to this disease. He had seen more than one case of smallpox mistaken for cerebro-spinal meningitis. About a year before, a young Swedish girl, suffering from this disease, had been brought to the Municipal Hospital from a ship arriving at this port. Of course he did not see her early in the disease nor was he able to obtain any history, but when admitted there was cephalgia, hyperesthesia, and marked stiffness of the neck and along the spinal column. She was totally deaf and in the course of the disease a purulent discharge came from the ears. For a time she seemed to improve, but finally lapsed into coma, and finally died after being in the hospital thirty-six days. No post-mortem was made. There had been under treatment in the hospital two cases which came from the locality mentioned by Drs. Mills and Cahall. These cases were not sent to the hospital until they had been sick about two weeks. He learned, however, that in both cases the sickness came on suddenly with a chill followed by fever, nausea, headache, intolerance of light, delirium, and stiffness amounting to rigidity of the cervical muscles. On admission most of these symptoms continued. It was about seven weeks since the attack occurred; in one case there was apparent improvement, but the condition of the other was still critical. The convalescence from this disease is always protracted. Indeed, he had sometimes questioned whether in severe cases perfect recovery ever takes place.

NEWS ITEMS.

New Quarantine Stations.—Dr. John B. Hamilton, Supervising Surgeon-General, Marine-Hospital Service, recommends to Congress the erection and thorough equipment of seven quarantine stations in addition to the one already provided for at the mouth of the Mississippi River, as follows: Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; San Francisco, Cal.; and Port Townsend, Oregon. The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi River, is \$489,500, and the estimated aggregate annual cost of maintaining them is \$93,000. "Believing, as the committee does, that it is the duty of Congress so to regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, the bill is reported, with the recommendation that it pass," is the concluding sentence in the Senate Committee's report.—*Sanitary News*, April 7, 1888.

An Appropriation for the College of Physicians and Surgeons at Baltimore.—The *Maryland Medical Journal* of March 31, 1888, states that a bill has passed the House of Delegates of Maryland appropriating \$10,000 for the use of the College of Physicians and Surgeons, of that city, to be used in the erection of a building adjoining the City Hospital on Calvert Street. The bill provides that the College shall support one free bed for each County in the State.

An Epidemic of Typhoid Fever in a College.—The *Sanitary News* writes that St. Stephen's College, near Poughkeepsie,

N. Y., has been closed on account of an outbreak of typhoid fever among the students. The trouble is attributed to the drinking water, which is obtained from a well at the bottom of the hill on which the college buildings are situated. It is claimed the drainage from them enters the well.

The Cremation of Hospital Garbage.—The offensive refuse from Cook County Hospital is now being burned in the Chicago garbage crematory.

Boards of Health in Ohio.—A new and very important law has just been passed in Ohio, whereby a board of health is established in each city or village containing five hundred or more inhabitants.

The Manufacture of Cognac.—In a recent report from Mr. Vice-Consul Warburton, some suggestive statements are made as to the condition of the brandy industry in the department of the Charente-Inferieure, from which, before the vine failure, a considerable portion of the brandy exported to this country (England) was derived, although much also came through Cognac, which is the headquarters of the trade. Mr. Warburton states that in 1875 the department produced 200,000,000 gallons of wine, a great part of the surplus over the local consumption being converted into brandy. In consequence, however, of the ravages of the phylloxera the produce has gradually fallen off, until in 1886 it was reduced to 13,000,000 gallons. As the local consumption of wine in the department is estimated at 12,000,000 gallons, it will be seen there must have been comparatively little left for brandy making. In fact, Mr. Warburton says that pure brandy has become very scarce and difficult to get in the department, most of what is sold being mixed with beet root or cheap German spirit, while the latter is very often sold as cognac without any mixture at all. Mr. Warburton significantly adds that the supply of "cognac" is very limited and must diminish every year, so that if the trade in the reputed article continues to go on much the same as it did before the failure of the vines, it will be evident that fraud is on the increase.—*Pharmaceutical Journal*.

Cremation in Italy.—The *British Medical Journal* writes that cremation in Italy has not, for the last two years or so, made so much headway as at first. The example at Milan in 1876 soon found many imitators, especially in the northern and central provinces of Italy, and there are now something like thirty-two societies and committees for favoring cremation, though they have not all got crematories of their own yet. The number of persons burnt last year was only 165, as against 181 in 1886. The Pisa Society, however, has not yet sent in its statistics for last year, and crematoriums will be opened in the course of the present year at Turin, San Remo, Verona, Bologna, Pavia, and one or two other towns. Of the total number of 952 cremations that have occurred in 17 cities in Italy, since 1876, as many as 518 have taken place in Milan, and 155 in Rome. The new crematorium at Milan is situated at the extreme end of the Campo Santo, just outside the walls of the city. The temple, as it is called, is a building in the Doric style, constructed of stone, and having an open façade supported by columns, from behind which rises a tower which, as seen

from the outside, looks as if it formed part of the temple, although in reality it stands quite by itself, and is the chimney. The inside of the building is divided into several rooms, in the first of which the religious rites are performed; its walls are lined with funeral urns containing the ashes of many of those who have been cremated at Milan. There is a separate room in which the bodies are placed pending cremation, and a third in which the relatives and friends spend the two hours occupied by the cremation itself. There are two furnaces—one being for general use, and the other for the bodies of persons who have died of contagious diseases and are not natives of Milan. The body is not visible to the onlookers when being put into the furnaces, nor are the ashes afterward.

Inconsistent Anti-vivisectionists.—Professor W. Mattieu Williams convicts the enemies of physiological experiment of inconsistency by showing that all male animals that come fully grown to market, as they must know, are subjected to one of the most painful mutilations that can be performed, merely to improve the flavor of their flesh. "A prominent member of the screeching sisterhood," he says, "has been seen lounging in her carriage drawn by a pair of horses that have been thus tortured for her luxurious convenience. To this she is supremely indifferent, but raves most virtuously against those who puncture the skin of a dog or rabbit in order to save thousands of human beings from cruel disease."—*Popular Science Monthly*.

The Removal of Dr. Thomas Keith to London.—Dr. Thomas Keith, the distinguished ovariotomist of Edinburgh, has made arrangements for removing to London in a short time. The Edinburgh School and the Royal Infirmary will sustain a great loss in Dr. Keith's change of location.

Recent Deaths among Medical Men in Paris.—Dr. Blot, a well-known obstetrician; Dr. Constantin James, a writer on the mineral waters of France; Dr. Martineau, a well-known gynecologist; and Dr. Brochin, the principal editor of the *Gazette des Hôpitaux*, are among the number of medical men recently deceased in Paris.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING APRIL 7, 1888.

ARMSTRONG, S. T., Passed Assistant Surgeon.—Granted leave of absence for fourteen days, March 21, 1888.

BRATTON, W. D., Passed Assistant Surgeon.—Promoted, and appointed Passed Assistant Surgeon from April 6, 1888, April 2, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 3 TO APRIL 16, 1888.

BAXTER, JEDEDIAH H., Colonel and Chief Medical Purveyor.—Detailed as a member of an Army Retiring Board, appointed to meet at Washington, D. C., on Wednesday, April 4, 1888.—*S. O. 75, A. G. O.*, April 2, 1888.

GREENLEAF, CHARLES R., Major and Surgeon.—Detailed as a member of an Army Retiring Board, appointed to meet at Washington, D. C., April 4, 1888.—*S. O. 75, A. G. O.*, April 2, 1888.

ALDEN, CHARLES H., Major and Surgeon.—Will repair to Washington, D. C., on public business, and, on the completion thereof, will return to his station (West Point, N. Y.).—*S. O. 75, A. G. O.*, April 2, 1888.

BIART, VICTOR, Captain and Assistant Surgeon.—Having been found incapacitated for active service, by an Army Retiring Board, sick leave of absence is still further extended until further orders, on account of disability.—*S. O. 77, A. G. O.*, April 4, 1888.

GARDNER, EDWIN F., Captain and Assistant Surgeon.—Leave of absence extended fourteen days.—*S. O. 77, A. G. O.*, April 4, 1888.

BUSHNELL, GEORGE E., Captain and Assistant Surgeon.—Ordered from Fort Preble, Mon., to Camp Pilot Butte, Wyoming.—*S. O. 79, A. G. O.*, April 6, 1888.

STEPHENSON, WILLIAM, First Lieutenant and Assistant Surgeon.—Ordered from Camp Pilot Butte, Wyoming, to Fort Verde, Arizona.—*S. O. 79, A. G. O.*, April 6, 1888.

MARIUS, E. A., First Lieutenant and Assistant Surgeon.—Ordered from Fort Verde, Arizona, to Fort Snelling, Minnesota.—*S. O. 79, A. G. O.*, April 6, 1888.

KNEEDLER, WILLIAM L., First Lieutenant and Assistant Surgeon.—Ordered from Fort Snelling, Minnesota, to West Point, N. Y.—*S. O. 79, A. G. O.*, April 6, 1888.

BORDEN, W. C., First Lieutenant and Assistant Surgeon.—Ordered from Fort Douglas, Utah Territory, to San Antonio, Texas.—*S. O. 79, A. G. O.*, April 6, 1888.

EDIE, G. L., First Lieutenant and Assistant Surgeon.—Ordered from San Antonio, Texas, to Fort Douglas, Utah Territory.—*S. O. 79, A. G. O.*, April 6, 1888.

EWEN, CLARENCE, Captain and Assistant Surgeon.—Granted leave of absence for six months, with permission to go beyond sea.—*S. O. 85, A. G. O.*, April 13, 1888.

APPOINTMENT.

RAFFERTY, OGDEN, to be Assistant Surgeon. with rank of First Lieutenant, March 26, 1888.

PROMOTION.

GIRARD, JOSEPH B., Assistant Surgeon.—To be Surgeon, with the rank of Major, March 22, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 14, 1888.

PERCY, HENRY T., Passed Assistant Surgeon.—Ordered from Naval Academy to Hospital, Washington, D. C.

CRAWFORD, M. H., Passed Assistant Surgeon.—Ordered from Hospital, Washington, D. C., and wait orders.

FLINT, J. M., Surgeon.—Ordered from Fish Commission duty to special duty at Smithsonian Institution.

PERSONS, R. C., Surgeon.—Ordered to duty in charge of Army and Navy Hospital, Hot Springs, Ark.

STONE, E. P., Assistant Surgeon.—Ordered from further treatment and to duty, Hospital, N. Y.

KINDELBURGER, DAVID, Medical Director.—Ordered from Hospital, Washington, D. C., and wait orders.

HOEHLING, A. A., Medical Inspector.—Ordered to Naval Hospital, Washington, D. C.

HAVMON, G. E. H., Passed Assistant Surgeon.—Ordered to duty at the Naval Academy, Annapolis, Md.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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